

Final

Phase B: Detailed Evaluation of Improvement Concepts for the I-25 Corridor NM 599 to NM 466

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Federal Highway Administration**

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Prepared by

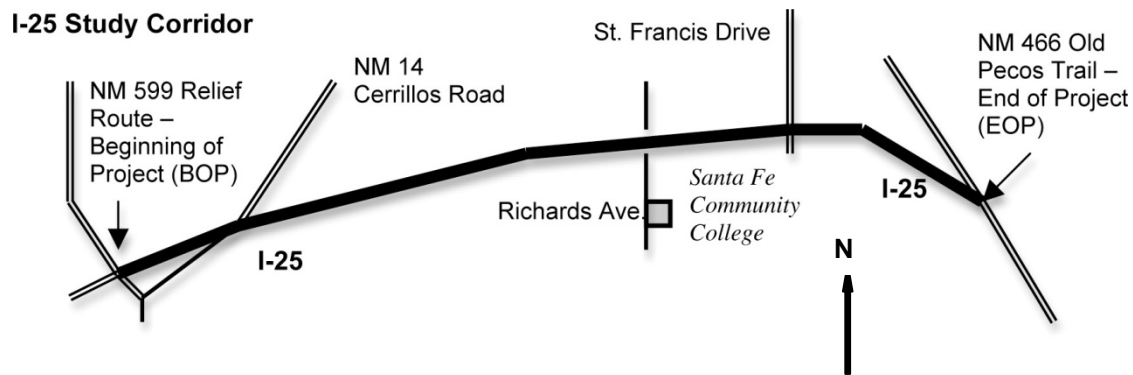
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Executive Summary



The New Mexico Department of Transportation (NMDOT) and the Federal Highway Administration (FHWA) have commissioned this corridor study for the Interstate-25 (I-25) corridor through Santa Fe, New Mexico, to meet the existing and future travel demands through the year 2030, as shown on Figure ES-1.

FIGURE ES-1
Study Limits



Agency Coordination and Public Involvement

Technical staff from FHWA, NMDOT, Santa Fe Metropolitan Planning Organization (MPO), and the City and County of Santa Fe has provided guidance throughout this study during regular meetings with the Project Management Team. The draft Phase B report and recommendations were also presented to the MPO's Technical Coordination Committee and Transportation Policy Board (TPB) on January 26, 2010, and February 11, 2010, respectively.

Two public meetings were held on August 20, 2009, and on December 3, 2009 at the Geneva Chavez Community Center during Phase B of the I-25 Corridor Study. Complete summaries of these meetings and the written and verbal comments received at each are included in Appendix B of this report.

Study Purpose and Need

The purpose of the I-25 Corridor Study is to develop a prioritized list of projects within the I-25 corridor, from NM 599/Veterans Memorial Highway (NM 599) to NM 466/Old Pecos Trail (NM 466) that will accommodate growth and enhance the regional transportation network in the surrounding area. The need for improvements to the I-25 corridor is driven by a combination of factors including safety, poor system connectivity, insufficient access, and congestion. Safety concerns in the corridor include a higher proportion of crashes and fatalities. The interstate hampers system connectivity, and is an obstacle to north-south travel for personal, commercial, and emergency vehicles, as well as for transit, cyclists, and pedestrians – a growing concern with development of the Santa Fe Community College District. The expanding development is also driving the need

for greater access to I-25, and the need to mitigate congestion and accommodate travel demand.

Detailed Evaluation of Improvement Concepts

Nine concepts were developed to meet the purpose and need of the study. Each of these, and a No Build Alternative were evaluated against a set of criteria established at the beginning of the study.

St. Francis Drive Interchange Improvements

The recommended improvements to the St. Francis Interchange will greatly enhance traffic operations on I-25 and St. Francis Drive, and improve vehicle, bicycle and pedestrian safety. The improvements include:

- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.
- Shift the off-ramp from southbound I-25 to northbound St. Francis Drive farther south of the signalized intersection at Sawmill Road to allow greater distance for vehicles to cross through traffic lanes before turning left at Sawmill Road.
- Move the northbound I-25 off-ramp to St. Francis Drive south of I-25 to separate it from the southbound I-25 off-ramp and the signalized intersection at Sawmill Road. The ramp will terminate at a signalized intersection with dual left-turn lanes onto northbound St. Francis Drive.
- Replace deficient bridge structures.
- Add street lighting.
- Make other geometric improvements to the ramps in accordance with NMDOT and AASHTO standards.

Cerrillos Road Interchange Improvements

The recommended improvements to the Cerrillos Road interchange will enhance traffic operations on I-25 and Cerrillos Road, and improve vehicle, bicycle and pedestrian safety. The improvements include:

- Tighten the turn radius of the southbound I-25 off-ramp to Cerrillos Road to shift it south of Beckner Road an additional 725 feet.
- Change the northbound off-ramp to a loop ramp located south of I-25 to separate it from the southbound off-ramp and move it much farther south of Beckner Road.
- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.
- Replace deficient bridge structures.
- Add street lighting.

- Make other geometric improvements to the ramps in accordance with NMDOT and AASHTO standards.

NM 466/Old Pecos Trail Interchange Improvements

The recommended improvements to the NM 466 interchange will enhance traffic operations on I-25 and NM 466, and improve vehicle, bicycle and pedestrian safety. The improvements include:

- Add barriers to the Rodeo Road left-turn pocket to prohibit vehicles from entering the pocket other than at the entrance.
- Separate the lanes at the ramp terminus with a 250-foot island to allow sufficient queuing storage for those vehicles turning right on NM 466 and entering the Rodeo Road left-turn pocket.
- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.
- Add street lighting.
- Make other geometric improvements to the ramps in accordance with NMDOT and AASHTO standards.

NM 599/Veterans Memorial Highway Interchange Improvements

The recommended improvements to the NM 599 interchange and primarily safety enhancements for vehicles, cyclists, and pedestrians, and include the following:

- Tighten the southbound I-25 on- and off-ramps to fit under the structures proposed in the NM 599 Corridor Study, which has the added benefit of moving the southbound off-ramp farther south of the signalized intersection at the existing frontage road.
- Add an acceleration lane on northbound NM 599 from the southbound I-25 off-ramp, and a deceleration lane on southbound NM 599 approaching the southbound I-25 on-ramp.
- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.
- Add street lighting.
- Make other geometric improvements to the ramps in accordance with NMDOT and AASHTO standards.

I-25 Auxiliary Lanes between NM 599 and NM 466

This concept proposes adding auxiliary lanes to both directions of I-25 between NM 599 and NM 466, to provide additional capacity without the added cost of reconstructing the interchanges. This should result in a reduction in congestion and crashes, and a greater distance for safely merging onto the freeway. The noise level could increase with the freeway widening and moving slightly closer to sensitive receptor locations; however, this could be mitigated by sound walls.

Richards Avenue Interchange

This concept proposes adding a new interchange to I-25 at Richards Avenue. This would provide additional access to I-25 and to the Santa Fe Community College District from I-25, and would dramatically improve emergency vehicle response time to locations I-25 between Cerrillos Road and St. Francis Drive. Some traffic would be diverted to I-25 from the surrounding road network, increasing congestion on I-25 and reducing congestion on the local streets. The additional volume on I-25 would be mitigated with the addition of auxiliary lanes on I-25 and the interchange improvements at St. Francis Drive.

Governor Miles Road Extension

This concept proposes extending Governor Miles Road from its terminus just east of Camino Carlos Rey, connecting to Galisteo Street and continuing east across the Rail Runner to Rodeo Park Drive. This concept is one of three concepts referred to in this study as system connections because they provide additional connections to the regional transportation network. Residents surrounding Governor Miles Road have strongly opposed this extension and feel that their neighborhoods would be adversely affected by the additional traffic volume, which the model projects to be approximately 900 vehicles during an afternoon peak hour. This extension would not distribute the traffic on the local road network enough to offset the financial costs and impacts on the local neighbors.

Camino Carlos Rey Undercrossing

This concept proposes extending Camino Carlos Rey, from its terminus at Governor Miles Road, south under I-25 and Rabbit Road, and then east to the Northeast Connector. The primary benefit of the undercrossing is the additional north-south connection across I-25 for vehicles, and a safer means of crossing I-25 for cyclists and pedestrians. An extension of Camino Carlos Rey is not projected to relieve enough traffic on Richards Avenue or provide sufficient operational benefits to the transportation network to offset the financial costs and impacts on the local neighbors.

Rail Runner Loop Overcrossing

This concept proposes an extension of the proposed Rail Runner Loop in the Las Soleras development, south over I-25, connecting with an extension of the East Frontage Road. The primary benefit of the undercrossing is the additional north-south connection across I-25 for vehicles, and a safer means of crossing I-25 for cyclists and pedestrians, but would have a significant visual impact. The projected volume of traffic that would use the overcrossing is not sufficient to offset the financial costs and impacts on the local neighbors.

Recommendations

Improvement Concepts Recommended for Inclusion in the Metropolitan Transportation Plan

The improvement concepts that provide the greatest benefit at the least cost are listed in Table ES-1 in order of priority, and recommended for inclusion in the MTP. The improvement concepts for additional system connectivity (Governor Miles Extension,

Camino Carlos Rey Undercrossing, and Rail Runner Loop Overcrossing) are not believed to provide sufficient benefit for the costs that would be incurred and are, therefore, not recommended for inclusion in the MTP. The benefits are considered in terms of how well the concept contributes to the following evaluation criteria: multimodal mobility, vehicle mobility, vehicular safety, bicycle/pedestrian safety, and emergency vehicle response. The costs are considered in terms of the community and environmental impacts, and the financial costs of developing the concept. The benefits and costs are not weighted equally, but are based on the best judgment of the project management team for the I-25 Corridor Study, with guidance from the analysis described in Section 6 of this report.

TABLE ES-1
Concepts Recommended for Inclusion in the MTP

Priority	Improvement Concept
1	St. Francis Drive Interchange Improvements
2	Cerrillos Road Interchange Improvements
3	NM 466 (Old Pecos Trail) Interchange Improvements
4	NM 599 (Veterans Memorial Highway) Interchange Improvements
5	Auxiliary lanes on I-25: between Cerrillos Road and St. Francis Drive
6	New Richards Avenue Interchange
7	Auxiliary lanes on I-25: between St. Francis Drive and NM 466 (Old Pecos Trail) ^a
9	Auxiliary lanes on I-25: between NM 599 (Veterans Memorial Highway) and Cerrillos Road

^aBecause of the grade northbound, consideration should be given to extend the auxiliary lane north through the interchange at NM 466 (Old Pecos Trail) for slow moving vehicles.

Project Recommendations

The improvement concepts recommended above can be broken into smaller, individual projects that can be advanced as funding becomes available. Table ES-2 groups these projects by short-, medium-, and long-term priorities.

The short-term projects are recommended to address deficiencies in bridges at the St. Francis Drive and Cerrillos Road interchanges, as noted in the I-25 Corridor Study Existing Conditions Report. The medium-term projects are primarily safety enhancements that include extending all of the I-25 on-ramps to allow greater distance to accelerate and safely merge onto I-25, and shift each of the southbound off-ramps farther south of the adjacent signalized intersections to allow greater distance for vehicles turning left to safely traverse through traffic lanes. The long-term projects address capacity and access, and correct other geometric deficiencies.

TABLE ES-2
Project Recommendations

Short-term Improvement Projects	Planning Level Cost Estimate
St. Francis: NB I-25 off-ramp (includes remove and back-fill both I-25 bridges over existing ramp)	\$ 1,500,000
St. Francis: Reconstruction of both I-25 Bridges Over Saint Francis (includes improvements to St. Francis)	\$ 7,000,000
Cerrillos: NB I-25 off-ramp. Includes:	\$ 15,000,000
<ul style="list-style-type: none"> • Remove and back-fill both I-25 bridges over existing ramp • Reconstruct NB on-ramp • Lengthen I-25 bridges to accommodate merge lane • Improvements to Cerrillos 	
Medium-Term Improvement Projects	Planning Level Cost Estimate
NM 599: NB I-25 on-ramp	\$ 200,000
Cerrillos: SB I-25 off-ramp to North Cerrillos	\$ 1,200,000
Cerrillos: SB I-25 on-ramp	\$ 900,000
St. Francis: NB I-25 on-ramp (from NB St. Francis)	\$ 700,000
St. Francis: NB I-25 on-ramp loop (from SB St. Francis)	\$ 900,000
St. Francis: SB I-25 off-ramp	\$ 1,200,000
St. Francis: SB I-25 on-ramp	\$ 5,000,000
NM 466: NB I-25 on-ramp (from NB Old Pecos Trail)	\$ 1,300,000
NM 466: NB I-25 on-ramp ILoop (from SB Old Pecos Trail)	\$ 1,000,000
NM 466: SB I-25 off-ramp and SB I-25 on-ramp	\$ 4,200,000
Long-Term Improvement Projects	Planning Level Cost Estimate
Cerrillos: SB I-25 off-ramp to South Cerrillos	\$ 400,000
NM 466: NB I-25 off-ramp	\$ 700,000
NM 599: SB I-25 off-ramp	\$ 1,400,000
NM 599: SB I-25 on-ramp	\$ 1,100,000
Auxiliary lanes on I-25: Cerrillos – St. Francis	\$ 17,000,000
Auxiliary lanes on I-25: St. Francis Dr – NM 466	\$ 2,000,000
Auxiliary lanes on I-25: NM 599 – Cerrillos	\$ 4,000,000
Richards Avenue Interchange	\$15M - \$35M

Interim Safety Improvements

There are several low-cost, interim safety improvement projects, listed in Table ES-3, that could be considered should funding be delayed for the ultimate improvements recommended above.

TABLE ES-3
Interim Safety Improvement Projects

Interim Safety Improvement Projects	Planning Level Cost Estimate
Electronic Emergency Vehicle Access Gate(s)	\$ 100,000
Partial Interchange Lighting at all four interchanges	\$ 400,000
Prohibit left-turns onto Beckner from SB I-25 off-ramp to NB Cerrillos. Create U-turn pocket north of Beckner.	\$ 300,000
NM 466: SB I-25 off-ramp (temporary extension)	\$ 200,000
Cerrillos: NB I-25 on-ramp (temporary extension)	\$ 200,000
Cerrillos: SB I-25 on-ramp (temporary extension)	\$ 200,000
NM 466: NB I-25 on-ramp (from NB Old Pecos Trail--temporary extension)	\$ 200,000
NM 466: NB I-25 on-ramp loop (from SB Old Pecos Trail--temporary extension)	\$ 200,000
NM 466: SB I-25 on-ramp (temporary extension)	\$ 200,000
NM 599: SB I-25 on-ramp (temporary extension)	\$ 200,000

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Acronyms and Abbreviations

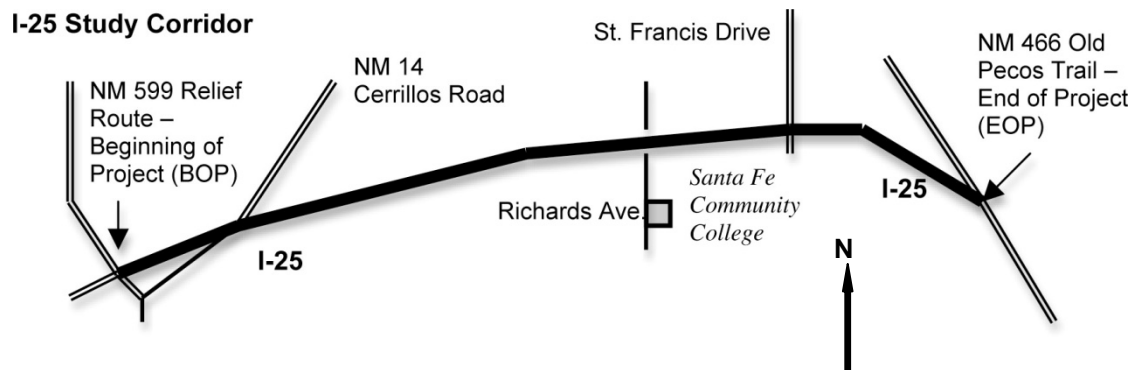
2005 MTP	Metropolitan Transportation Plan 2005 -2030
AASHTO	American Association of State Highway and Transportation Officials
FHWA	Federal Highway Administration
I-25	Interstate 25
LOS	level of service
MP	milepost
mph	mile(s) per hour
MPO	(Santa Fe) Metropolitan Planning Organization
NB	northbound
NM 466	NM 466/Old Pecos Trail
NM 599	NM 599 /Veterans Memorial Highway
NMDOT	New Mexico Department of Transportation
SB	southbound
TPB	Transportation Policy Board
V/C	volume/capacity



1.1 Location and Overview

The New Mexico Department of Transportation (NMDOT) and the Federal Highway Administration (FHWA) have commissioned this corridor study for the Interstate-25 (I-25) corridor through Santa Fe, New Mexico, and in accordance with the latest edition of the *New Mexico Department of Transportation Location Study Procedures, a Guide for Alignment and Corridor Studies* (NMDOT, 2001). The purpose of the study is to provide recommendations for the regional transportation network and for improvements to I-25 between NM 599/Veterans Memorial Highway (NM 599; Milepost [MP] 276) and NM 466/Old Pecos Road (NM 466; MP 284) to meet the existing and future travel demands through the year 2030 for this segment of I-25, as shown on Figure 1-1.

FIGURE 1-1
Study Limits



I-25 is the only north-south interstate in the State of New Mexico, traversing from Colorado to the north to Las Cruces to the south. Regionally, I-25 links the three largest cities within the state: Santa Fe, Albuquerque, and Las Cruces. Over the past 10 years, Santa Fe and Albuquerque have experienced rapid population growth, economic development, and employment opportunities. With only 58 miles between the two cities through I-25, and with vehicle travel times of less than an hour, the communities have developed interdependent economies with commuters traveling the highway on a daily basis.

1.2 Coordination with Concurrent Studies in Santa Fe

Recommendations from this study have been considered jointly with recommendations from two other concurrent studies in Santa Fe, as follows:

- St. Francis Drive corridor (US 84/285) from I-25 to NM 599. This is the main north-south urban arterial in Santa Fe, providing vehicular and pedestrian access to businesses and institutions, as well as accommodations for through travel for north and south destinations.

- NM 599 corridor from I-25 to US 84/285. This is the north-south relief route on the west side of Santa Fe, intended for relatively high-speed through traffic with few access points.

Each of these corridors provides different levels of transportation service and addresses different needs, but the three corridors also accommodate similar and overlapping travel demands. St. Francis Drive and NM 599 both serve north-south through travel, although St. Francis provides greater accessibility to property, while NM 599 provides higher mobility. The I-25 corridor provides interstate access to NM 599 and St. Francis Drive and has the potential to connect with other major streets, influencing the operations of NM 599 and St. Francis Drive. Because these three projects potentially address cumulative deficiencies and issues and will affect one another, they are being closely coordinated by the respective study teams. It is recognized that each of these corridor studies is significantly affected by the other two studies. Copies of the executive summaries from the other two studies are included in Appendix A.

1.3 Study Process and Report Organization

This study follows the procedures described in the *New Mexico Department of Transportation Location Study Procedures, a Guide for Alignment and Corridor Studies*, and accepted practices for developing context sensitive solutions for transportation planning projects. Input from the public and stakeholders is included in every step of the study process. Phase A of this study accomplished the following: (1) verification of the need for an action, (2) development of a range of potential alternatives to achieve the need, and (3) the elimination of alternatives that were clearly not feasible. The results are documented in the July 2009 Phase A: Initial Evaluation of Improvement Concepts, final report.

As noted in the *New Mexico Department of Transportation Location Study Procedures, a Guide for Alignment and Corridor Studies*, "Phase B is the Detailed Evaluation of Alternatives [and] is intended to further evaluate and refine the alternatives advanced from Phase A" (NMDOT, 2001). Subsequent sections of this report present the following information:

2. **Agency Coordination and Public Involvement.** This section includes a summary of the information presented and comments received at agency and public meetings.
3. **Study Purpose and Need.** Only the summary statement is presented in this report. Support for the purpose and need is found in the Phase A report.
4. **Traffic Forecasts.** This section describes the traffic modeling conducted for all three Santa Fe studies, and the model output relevant to this study.
5. **Evaluation Criteria.** A description of the measures used to evaluate each of the improvement concepts is presented.
6. **Detailed Evaluation of Improvement Concepts.** This core section of the report contains an assessment of each improvement concept relative to the evaluation criteria.
7. **Recommendations.** This section contains a prioritized list of improvement projects for possible inclusion into the Santa Fe Metropolitan Transportation Plan.



2.1 Context Sensitive Solutions Approach

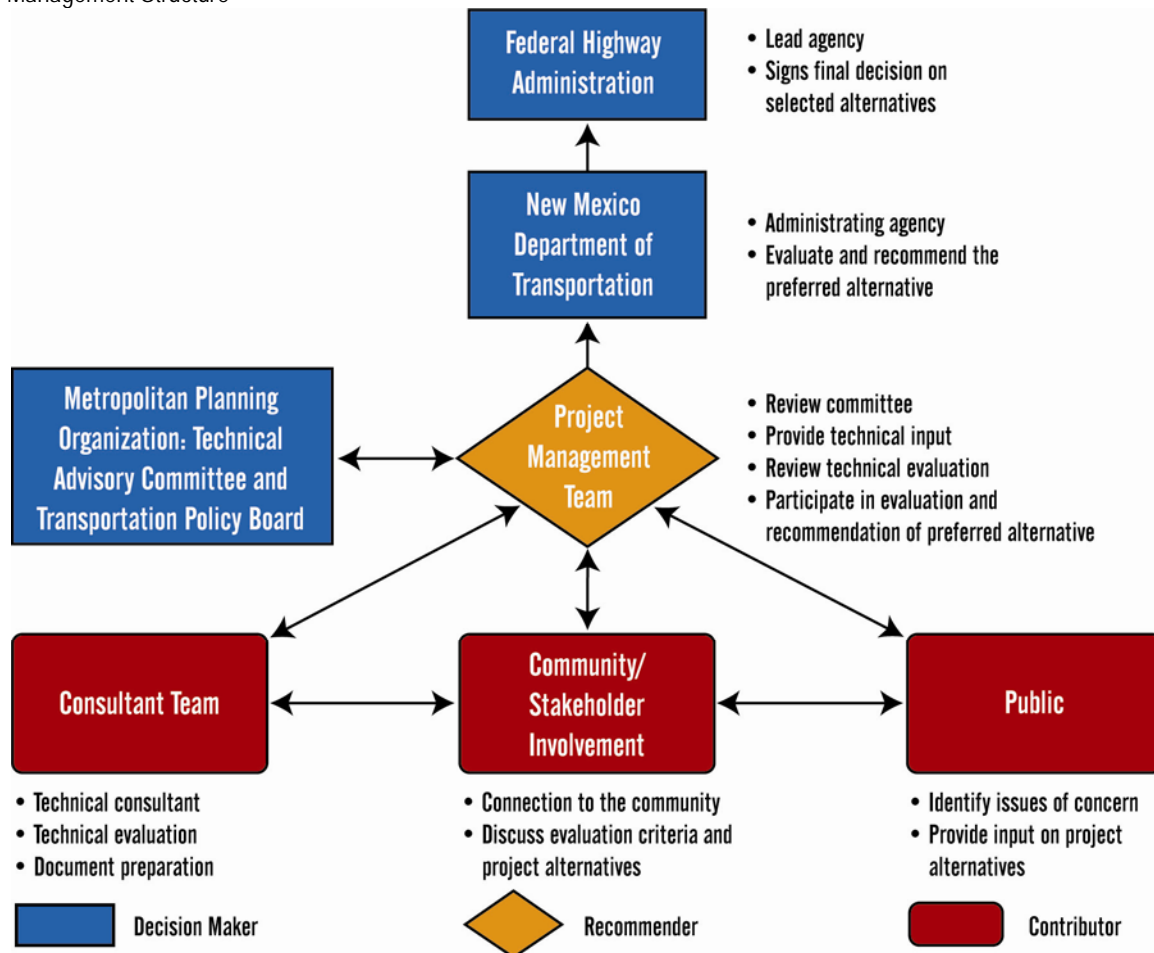
The approach for the I-25 Corridor Study incorporates "context sensitivity" to determine the purpose and need for the project and develop solutions to advance to the design phases. This approach ensures that the project satisfies the purpose and need as required by the National Environmental Policy Act while establishing a range of "stakeholder values" that establishes the "context" for context sensitive solutions (design); that the safety requirements of any solution are addressed; that the project is in harmony with the local communities and preserves the environmental, scenic, aesthetic, historic, and natural resources in the area; that the project meets the expectations of the stakeholders; that the project is built with minimal disruption to the communities, businesses, and facility users; and that the project adds lasting value to the local communities consistent with the planned land uses for the area.

This approach calls for an interdisciplinary team approach that will include collaboration of several technical professionals, local community interest groups and neighborhood associations, area landowners, business owners, area institutions, affected local governments, transportation facility users, and the public. The management and decision-making structure for the study is illustrated in Figure 2-1.

2.2 Agency Coordination

Technical staff from FHWA, NMDOT, Santa Fe Metropolitan Planning Organization (MPO), and the City and County of Santa Fe has provided guidance throughout this study during regular meetings with the Project Management Team. The draft Phase B report and recommendations were also presented to the MPO's Technical Coordination Committee and Transportation Policy Board (TPB) on January 26, 2010, and February 11, 2010 respectively.

FIGURE 2-1 Management Structure



2.3 Public Meetings

Two public meetings were held at the Genoveva Chavez Community Center during Phase B of the I-25 Corridor Study. Complete summaries of these meetings and the written and verbal comments received at each are included in Appendix B of this report.

A short list of improvement concepts carried forward from Phase A was presented at the first public meeting held on August 20, 2009, prior to conducting the detailed analysis of each (see Figure 2-2). Strong opposition to the extensions of Camino Carlos Rey and Governor Miles Road was voiced at this meeting.

At the second public meeting held on December 3, 2009, the results of the detailed evaluation were presented along with a recommended prioritized list of improvement projects for possible inclusion into the Santa Fe Metropolitan Transportation Plan. Even though the extensions of Camino Carlos Rey and Governor Miles Road were not included on the prioritized list, many attendees wanted to ensure these concepts did not make it into the *Metropolitan Transportation Plan 2005 – 2030* (2005 MTP; MPO, 2009) and wanted to understand the process for voicing their objections to the TPB of the MPO. Representatives

of the MPO encouraged interested citizens to attend the TPB meeting when these concepts would be discussed.

FIGURE 2-2
August 20, 2009, Open House



Study Purpose and Need



The purpose of the I-25 Corridor Study is to develop a prioritized list of projects within the I-25 corridor, from NM 599 to NM 466, that will accommodate growth and enhance the regional transportation network in the surrounding area. The need for improvements to the I-25 corridor is driven by a combination of factors including safety, poor system connectivity, insufficient access, and congestion. Safety concerns in the corridor include a higher proportion of crashes and fatalities. The interstate hampers system connectivity, and is an obstacle to north-south travel for personal, commercial, and emergency vehicles, as well as for transit, cyclists, and pedestrians – a growing concern with development of the Santa Fe Community College District. The expanding development is also driving the need for greater access to I-25, and the need to mitigate congestion and accommodate travel demand.



Traffic forecasting was done using the Future Forecast VISUM model of the MPO. The MPO model does not reflect growth by a certain year. The socioeconomic data assumes full development of the MPO planning area and the resulting traffic forecasts reflect this full development scenario.

4.1 Model Scenarios

4.1.1 Base Model

The MPO model was adjusted before the forecasting to create the NMDOT base model, which included the existing road network, and proposed improvements and additions documented in the 2005 MTP (MPO, 2009), with the following exceptions:

- The extension of Governor Miles Road to Galisteo Street, with an extension of Yucca Street to Governor Miles Road was omitted from the NMDOT base model. These extensions are included in the 2005 MTP, but because the I-25 Corridor Study team was asked to evaluate these extensions, they were omitted from the NMDOT base model and included in the alternative scenarios.
- Four lanes on Richards Avenue from Avenida del Sur to Rodeo Road were included in the NMDOT base model and all model scenarios. The 2005 MTP includes improvements to Richards Avenue but does not specify the type of improvements. For modeling purposes, the improvements stipulated in the 2005 MTP for Richards Avenue are assumed to be a widening to four lanes.
- Updated socioeconomic data and roadway network for the proposed Las Soleras development was included in the NMDOT base model and all model scenarios. Las Soleras is an approved development located north of I-25, between Cerrillos Road and Richards Avenue.
- A new interchange on NM 599 at Jaguar Road was added to the NMDOT base model and all model scenarios. A developer is currently negotiating with NMDOT to design and construct the Jaguar Road interchange using private funding.

4.1.2 Alternative Concepts

The improvement concepts from each of the three Santa Fe corridor studies were grouped into seven alternative scenarios, as shown in Table 4-1. For analysis purposes, each of these scenarios is over and above the improvements contemplated in the base model. Scenarios 1, 2, and 7 were primarily used for the I-25 Corridor Study, as described below:

- Scenario 1 is the future full buildout of all of the system improvements considered by the three Santa Fe corridor studies.
- Scenario 2 is the same as Scenario 1 without the Richards Avenue interchange.

- Scenario 7 is the same as Scenario 1 without the extensions of Governor Miles Road or the crossings at Camino Carlos Rey or Rail Runner Loop.

TABLE 4-1
Travel Demand Model Scenarios

Improvement Concepts	Scenarios						
	1	2	3	4	5	6	7
I-25 Corridor Study Concepts							
I-25 Interchange at Richards Avenue	x						x
Governor Miles Road Extension to Galisteo Street with Yucca Street Connection	x	x	x	x	x	x	
Governor Miles Road Extension from Galisteo Street to Rodeo Park Drive	x	x					
Camino Carlos Rey Extension/Crossing	x	x					
Rail Runner Loop Crossing	x	x					
I-25 Frontage Road at Dinosaur Trail and Rail Runner Loop Crossing	x	x					x
I-25 Interchange Improvements	x	x	x	x			x
I-25 Auxiliary Lanes	x	x	x	x			x
I-25 Speeds Reduced to 65 mph between NM 599 and NM 466	x	x					x
Eldorado Connection	x	x	x				x
Concepts from the NM 599 and St. Francis Drive Corridor Studies							
All NM 599 Interchanges	x	x					x
NM 84/285 Auxiliary Lanes from NM 599 to Guadalupe (SB only)	x	x	x	x			x
NM 599 Speed Increased to 65 mph between I-25 and NM 285	x	x					x
All NM 599 Signals				x			
NM 599 Speed Reduced to 45 mph				x			
NM 599/CR 62 Interchange					x		
NM 599/CR 70 and NM 599 /Airport Road Interchanges						x	
I-12/NM 599 Interchange Frontage Road Overpass					x		

Notes:
Items shown in red are relevant to the I-25 Corridor Study.
mph = mile(s) per hour
SB = southbound

4.2 Model Output

A summary of projected afternoon peak-hour congestion (volume/capacity [V/C]) for each model scenario at key locations within the study limits is shown in Table 4-2. Table 4-3 shows the projected vehicle miles traveled and vehicle hours traveled. Each scenario modeled assumed that all of the improvements of the base model were also implemented. Output graphics of all the model runs analyzed for this study are included in Appendix C, and include the following:

- Traffic volumes
- V/C
- Travel distance from various locations, within specified time limits

The last item listed above was useful for estimating the distance emergency vehicles could travel from various police and fire stations in under 2 minutes, within 2 to 5 minutes, within 5 to 10 minutes, and over 10 minutes. The time and distances are not precise, but the comparative analysis is useful. They demonstrate the improvement in emergency vehicle response time to locations on I-25 provided by an interchange at Richards Avenue.

The same methodology was used to compare the multimodal connectivity of each scenario by estimating the distance that vehicles, bicycles, and pedestrians could travel from the Santa Fe Community College. This output graphic did not reveal any significant improvement in travel time for cyclists or pedestrians gained by constructing freeway crossings at Camino Carlos Rey or Rail Runner Loop.

TABLE 4-2
Afternoon Peak-hour Congestion

Volume to Capacity Ratio - PM Traffic

Segment Location	Base Design	Scenario 1 (all)		Scenario 2 (no Richards)		Scenario 7 (no system connections)	
		Based on Existing Number of Lanes	Based on Proposed Number of Lanes	Based on Existing Number of Lanes	Based on Proposed Number of Lanes	Based on Existing Number of Lanes	Based on Proposed Number of Lanes
I-25 Mainline and Ramps							
SB On-Ramp from St. Francis Dr to I-25	0.73	1.85	0.93	1.65	0.83	1.85	0.93
NB Off-Ramp from I-25 to St. Francis Dr	0.76	0.91	0.91	0.67	0.67	0.91	0.91
I-25 NB travel between Richards Ave & St. Francis Dr	0.66	0.76	0.40	0.55	0.45	0.75	0.40
I-25 SB travel between Richards Ave & St. Francis Dr	0.97	1.18	0.78	1.02	0.68	1.17	0.78
I-25 SB travel between Cerrillos Rd & Richards Ave	0.97	0.97	0.65	1.02	0.68	0.95	0.63
I-25 NB travel between Cerrillos Rd & Richards Ave	0.66	0.56	0.28	0.55	0.37	0.56	0.27
NB On-ramp from Cerrillos Rd	0.44	0.09	0.18	0.18	0.33	0.15	0.28
SB Off-ramp to Cerrillos Rd	0.53	0.45	0.45	0.63	0.63	0.44	0.44
I-25 SB travel between Cerrillos Rd & Veterans Memorial Hwy	0.89	0.92	0.61	0.91	0.60	0.92	0.61
I-25 NB travel between Cerrillos Rd & Veterans Memorial Hwy	0.64	0.59	0.39	0.57	0.38	0.60	0.40
NB Off-ramp from I-25 to Veterans Memorial Hwy	0.30	0.71	0.27	0.72	0.27	0.71	0.27
SB Off-ramp from I-25 to Veterans Memorial Hwy	0.82	0.80	0.80	0.81	0.81	0.79	0.79
I-25 SB travel just S of Veterans Memorial Hwy	0.87	0.88	0.88	0.88	0.88	0.88	0.88
I-25 NB travel just S of Veterans Memorial Hwy	0.47	0.47	0.47	0.47	0.47	0.47	0.47
I-25 NB travel between St. Francis Dr & Old Las Vegas Way	0.63	0.58	0.38	0.50	0.33	0.56	0.37
I-25 SB travel between St. Francis Dr & Old Las Vegas Way	0.58	0.57	0.38	0.52	0.35	0.56	0.37
SB Off-ramp from Old Las Vegas Hwy	0.36	0.12	0.32	0.13	0.33	0.12	0.32
NB On-ramp to Old Las Vegas Hwy	0.57	0.48	0.48	0.48	0.48	0.48	0.48
Local Roads							
Richards Ave / I-25	0.64	N/A	0.61	N/A	0.50	N/A	0.74
Camino Carlos Rey (just N of Governer Miles Rd)	0.45	N/A	0.41	N/A	0.39	N/A	0.23
Camino Carlos Rey / SB ramp	-	N/A	0.44	N/A	0.43	N/A	-
Richards Ave / Governor Miles Rd	0.67	N/A	0.55	N/A	0.58	N/A	0.63
Governer Miles Rd / Camino Carlos Rey	0.45	N/A	0.37	N/A	0.43	N/A	0.23
Galisteo St (Just S of Rodeo Rd)	0.07	N/A	0.11	N/A	0.26	N/A	0.07
Yucca St (S of Rodeo Rd)	0.13	N/A	0.28	N/A	0.21	N/A	0.13
Sawmill Rd (S of Rodeo Rd)	-	N/A	0.08	N/A	0.26	N/A	-
Beckner / I-25	-	N/A	0.54	N/A	0.51	N/A	-
Dinosaur Trail (S of Richards Ave)	0.21	N/A	0.49	N/A	0.44	N/A	0.21
Zia / St. Francis Dr	0.48	N/A	0.31	N/A	0.42	N/A	0.33
Rodeo Rd (W of Sawmill)	0.67	N/A	0.42	N/A	0.54	N/A	0.62

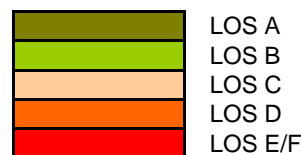


TABLE 4-3
Projected Vehicle Miles and Hours Traveled

Projected Vehicle Miles Traveled				
	Base	Scenario 1	Scenario 2	Scenario 7
I-25 Corridor	95,069	95,894	93,721	95,151
I-25 and Vicinity	175,453	173,798	172,980	173,744
Entire Model	589,583	590,404	590,055	591,438

Projected Vehicle Hours Traveled				
	Base	Scenario 1	Scenario 2	Scenario 7
I-25 Corridor ^a	3,660	3,413	3,375	3,586
I-25 and Vicinity ^b	7,545	6,945	7,049	7,179
Entire Model ^c	38,602	37,431	37,396	37,498

Notes:

^a includes I-25, the ramps, and adjacent intersections

^b includes I-25 and nearby major streets

^c includes everything within the model boundary



Each improvement concept and the No Build Alternative are evaluated based on a series of criteria established at the beginning of the study with input from the public and stakeholders. The criteria are grouped differently from Phase A and, in some cases, expanded upon in conjunction with additional information available during this phase of the study. The criteria and sub-criteria, along with techniques used to measure them, are described below.

5.1 Multi-modal Mobility

This criterion measures the ability of the improvement concept to improve transit, bicycle, and pedestrian mobility.

5.1.1 Transit Reliability

Transit reliability is measured qualitatively based on the ability of the improvement concept to create additional potential transit routes, and to reduce congestion and travel time for all vehicles; thereby, increasing the reliability of transit service. Model output measuring the vehicle hours traveled was used to support this analysis.

5.1.2 Bicycle/Pedestrian Connectivity

Bicycle/pedestrian connectivity is measured qualitatively based on the ability of the improvement concept to create additional bicycle and pedestrian routes. Model output estimating the distance that bicycles and pedestrians could travel from the Santa Fe Community College in under 20 minutes, within 20 to 40 minutes, and within 40 to 60 minutes, was used to support this analysis.

5.2 Vehicle Mobility

This criterion measures the ability of the improvement concept to improve traffic operations and minimize congestion.

5.2.1 Vehicular Connectivity

Vehicular connectivity is measured qualitatively based on the ability of the improvement concept to improve the transportation network by connecting additional roads.

5.2.2 Access to I-25

Access to I-25 is measured qualitatively based on the ability of the improvement concept to improve access to I-25 and access to the community from I-25.

5.2.3 Volume/Capacity

Model output estimating the V/C of key freeway, ramp, and arterial segments in and around the I-25 corridor (see Table 4-2) was used to measure the impact that the

improvement concept would have on congestion in the I-25 corridor, assuming full buildout of the MPO planning area.

5.2.4 System-wide Travel Time

System-wide travel time was measured using model output estimating the vehicle miles traveled and vehicle hours traveled in and around the corridor (see Table 4-3) to measure the impact that the improvement concept would have on travel time in the I-25 corridor.

5.3 Vehicular Safety

Vehicular safety is measured qualitatively based on the ability of the improvement concept to improve safety for vehicles.

5.4 Pedestrian/Bicycle Safety

Pedestrian/bicycle safety is measured qualitatively based on the ability of the improvement concept to improve safety for pedestrians and cyclists.

5.5 Emergency Vehicle Response

This criterion measures the ability of the improvement concept to improve emergency vehicle response time to all points on and across I-25, and road network redundancy for incident management.

5.5.1 Emergency Vehicle Response Time

Model output estimating the distance emergency vehicles could travel from various police and fire stations in under 2 minutes, within 2 to 5 minutes, within 5 to 10 minutes, and over 10 minutes, was used to measure emergency vehicle response time.

5.5.2 Redundancy (for Incident Management)

Redundancy is measured qualitatively based on the ability of the improvement concept to provide redundant or alternative routes for detouring vehicles in the case of an incident.

5.6 Environmental Preservation

This criterion measures the ability of the improvement concept to minimize impacts on the natural environment and cultural resources.

5.6.1 Noise Impacts

Noise impacts are estimated qualitatively based on the anticipated change in noise likely to occur at sensitive receptor locations (such as homes, schools, parks, and hospitals) as a result of the improvement concept.

5.6.2 Visual Impacts

The analysis for visual or scenic resources was conducted using the evaluative process set out by the FHWA in *Visual Impact Assessment for Highway Projects* (FHWA, 1988). This analysis was employed on the Camino Carlos Rey and Rail Runner Loop overcrossings, which have the most significant visual impacts of the improvement concepts considered in this study. Comparison of the “before” photographs with the simulations of these concepts as they would appear after construction provided the basis for determining project impacts on views and visual quality. The complete analysis and technical report can be found in Appendix D.

A qualitative evaluation was performed on the other improvement concepts.

5.6.3 Air Quality/Climate Change

Air quality and climate change are estimated qualitatively based on the anticipated change likely to occur as a result of the improvement concept. Model output measuring the vehicle miles traveled in and around the I-25 corridor was used to support this analysis, based on the assumption that there is a correlation between vehicle miles traveled and vehicular emissions.

5.6.4 Disturbed Land

The total acres of land that would be disturbed – permanently and temporarily during construction – by each improvement concept was calculated as a surrogate measure of possible impacts on the natural environment.

5.7 Community Consistency

This criterion measures the ability of the improvement concept to improve the community by minimizing impacts on established neighborhoods, minimizing relocations, enhancing economic development, and remaining consistent with adopted land use and transportation plans.

5.7.1 Neighborhood Preservation

Neighborhood preservation is estimated qualitatively based on anticipated impacts on local neighborhoods, such as noise, air quality, safety, congestion, likely to occur as a result of the improvement concept. Comments received from the public during and following the public meetings influenced this evaluation.

5.7.2 Residential and Business Relocations

The total number of residential and business relocations that would be needed as a result of each improvement concept was estimated.

5.7.3 Economic Development

Economic development is measured qualitatively based on the ability of the improvement concept to enhance economic development within the surrounding area, and is measured by

factors, such as improved accessibility and reliability, travel-time savings, and safety benefits.

5.7.4 Land Use and Transportation Plan Consistency

This criterion is measured qualitatively based on the improvement concept's consistency with adopted land use and transportation plans, including:

- 2005 MTP
- *The Santa Fe Community College District Plan* (Santa Fe County Board of County Commissioners and Santa Fe Extraterritorial Zoning Authority, 2000)
- *City of Santa Fe General Plan* (City of Santa Fe, 1999)

5.8 Financial Feasibility

This criterion measures the feasibility of the improvement concept in terms of total cost and available funding.

5.8.1 Project Cost

The estimated cost, using 2009 dollars, for each of the proposed improvement concepts is based on the conceptual level layout of each of the alternative improvement concepts. These layouts provided sufficient detail to evaluate the improvement concepts as part of the detailed analysis of alternatives at a planning level; however, the design for the improvement concepts will need to be further refined as they are moved through from the study phase into preliminary design.

5.8.2 Funding Availability

This criterion measures the amount of funding already allocated, if any, for the improvement concept.

Detailed Evaluation of Improvement Concepts



This section describes each improvement concept followed by a detailed evaluation based on the criteria presented in Section 5. The score that each concept received for each evaluation criteria and performance measure is shown in Table 6-1. Those scores are also shown in parenthesis in the corresponding sub-headings that follow each improvement concept in this section.

TABLE 6-1
Evaluation Matrix

Evaluation Criteria	Multi-Modal Mobility			Vehicle Mobility					Vehi- cular Safety	Bike / Ped Safety	Emergency Vehicle Response			Community Consistency					Environmental Preservation					Financials			
	Transit Reliability	Bicycle/Pedestrian Connectivity	Average Score	Vehicular Connectivity	Access to I-25	Volume/ Capacity	Systemwide Travel Time	Average Score	Vehicular Safety	Bicycle/Pedestrian Safety	Emergency Vehicle Response Time	Redundancy (for incident management)	Average Score	Land Use and Transportation Plan Consistency	Economic Development	Neighborhood Preservation	Residential and Business Relocations	Average Score	Noise Impacts	Visual Impacts	Disturbed Land	Air Quality / Climate Change	Average Score	Project Cost	Funding Availability	Average Score	
Performance Measures																											
Improvement Concepts																											
St. Francis Interchange Improvements	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Cerrillos Interchange Improvements	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
NM 466 Interchange Improvements	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	●
NM 599 Interchange Improvements	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	●
Auxiliary lanes (prioritized by segments)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	○	●	●	●	○	●	●
Richards Interchange	●	○	●	●	●	●	●	●	○	○	●	●	●	●	●	○	●	●	●	○	○	●	●	○	○	○	○
Governor Miles Extension	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	●	●	○	●	○	●	●	○	○	○	○
Camino Carlos Rey Under-crossing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	●	●	○	○	○	●	○	○	○	○	○
Rail Runner Loop Over-crossing	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	●	●	○	○	○	○	○	○	○	○	○
No Build	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

Legend: ● = Positive effect
 ● = Minor positive effect
 ○ = No impact or change
 ○ = Minor negative effect
 ○ = Negative effect

6.1 St. Francis Drive Interchange Improvements

Two options for improvements to the St. Francis Drive interchange were evaluated and are identified by their primary difference—the off-ramp terminal at northbound I-25 to northbound St. Francis Drive (see Figures 6-1 and 6-2 at the end of this section). The scores shown in Table 6-1 for St. Francis Drive interchange improvements are for Option A, the preferred option, but both are described and evaluated in this section.

6.1.1 Multi-modal Mobility (Score: Minor Positive Effect)

The overall score of “minor positive effect” for multi-modal mobility is a composite of the performance measures described below.

Transit Reliability (Score: No Impact or Change)

Neither option includes improvements that would enhance transit reliability significantly. Overall improvements to vehicular mobility that could be achieved by improvements to the interchange would also improve transit operations, but not enough to merit scoring this performance measure differently from “no impact or change.”

Bicycle/Pedestrian Connectivity (Score: Minor Positive Effect)

Minor improvements to bicycle and pedestrian connectivity would be realized by the addition of sidewalks, bike lanes, and improved bike and pedestrian crossings at the ramp terminals and merge points.

6.1.2 Vehicle Mobility (Score: Minor Positive Effect)

The overall score of “minor positive effect” for vehicular mobility is a composite of the performance measures described below.

Vehicular Connectivity (Score: No Impact or Change)

No new connections are proposed with this option.

Access to I-25 (Score: Minor Positive Effect)

By improving operations at the interchange, access to I-25 is slightly improved.

Volume/Capacity (Score: Positive Effect)

Projected volumes are anticipated to exceed current capacity at the St. Francis southbound on-ramp (especially during the afternoon commute) and northbound off-ramp (especially during the morning commute). A new interchange at Richards Avenue would further increase volumes by offering a more attractive route (I-25) than using local streets. Both options propose adding a lane to the southbound I-25 on-ramp.

A more detailed operations analysis was conducted to determine the preferred configuration of the I-25 southbound off-ramp to northbound St. Francis. The traffic model projected 1,490 morning peak-hour traffic volume, which would put this ramp at capacity. Adding a second lane to the ramp would compound the conflicts and cause significant operational and safety impacts at the point where the ramp merges with the I-25

southbound off-ramp and St. Francis Drive. If the model projections were correct, then an alternative configuration would be needed, contrary to the desires of stakeholders who expressed a desire to preserve the free-flow ramps, if at all possible, and avoid ramps that ended in a signalized intersection. The model provides estimates of traffic at full buildout and is calibrated for afternoon peak-hour volumes – not morning volumes, which are critical at this ramp. Therefore, 2030 morning (a.m.) peak-hour volumes needed to be estimated before alternative solutions could be considered to validate the need to make any changes to the existing free-flow ramp. Two independent estimates were performed. The first increased actual 2006 volumes by half the percent increase projected for full buildout by the traffic model. The second used historical trends to project 2030 volumes. The two estimates were 1,610 and 1,550 vehicles per hour, respectively, validating the need for changing the existing free-flow ramp.

A two-lane roundabout and a signalized intersection with two left-turn lanes from the off-ramp to St. Francis Drive were considered for the northbound ramp terminal at St. Francis Drive. A traffic analysis of each type of intersection indicated that either configuration would operate adequately for about 15 years. However, if growth projections are accurate, the queue lengths on the off-ramp would become too long and three lanes would ultimately be needed (see Table 6-2).

TABLE 6-2
2030 Morning (a.m.) Peak-hour Traffic Operations Analysis - St. Francis Drive Interchange

	Traffic Volume	Roundabout			Two Left-turn Lanes			Three Left-turn Lanes		
		Delay (sec)	LOS	Queue Length (feet)	Delay (sec)	LOS	Queue Length (feet)	Delay (sec)	LOS	Queue Length (feet)
Northbound Off-Ramp	1,492	46.8	E	700	25.7	C	750+	17.7	B	295
Northbound St. Francis	965	14.0	B	175	22.8	C	300	17.7	B	255
Southbound St. Francis	1,180	8.2	A	75	30.8	C	433	21.2	C	335

LOS = level of service

Of the three options considered for the I-25 northbound off-ramp to northbound St. Francis Drive (free-flow, roundabout, and signalized intersection), this study recommends a signalized intersection with dual left-turn lanes onto St. Francis Drive, and reconstructed bridge structures over St. Francis Drive that are wide enough to accommodate an additional lane in each direction, should further expansion be required in the future.

System-wide Travel Time (Score: Minor Positive Effect)

Minor improvements to system-wide travel time are anticipated as a result of reduction in congestion at this key interchange (see Table 4-3).

6.1.3 Vehicular Safety (Score: Positive Effect)

Significant improvements to vehicular safety would be achieved by the following improvements:

- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.
- Shift the off-ramp from southbound I-25 to northbound St. Francis Drive farther south of the signalized intersection at Sawmill Road to allow greater distance to cross through traffic lanes before for vehicles turning left at Sawmill Road.
- Move the northbound I-25 off-ramp to St. Francis Drive south of I-25 to separate it from the southbound I-25 off-ramp and the signalized intersection at Sawmill Road.
- Replace deficient bridge structures.
- Add street lighting.
- Make other geometric improvements to the ramps in accordance with NMDOT and American Association of State Highway and Transportation Officials (AASHTO) standards.

6.1.4 Pedestrian/Bicycle Safety (Score: Minor Positive Effect)

Pedestrian and bicycle safety would be improved by the addition of street lighting, sidewalks, bike lanes, and improved bike and pedestrian crossings at the ramp terminals and merge points. Safety at the northbound I-25 off-ramp terminal would be significantly improved with the signalized intersection and removal of the free-flowing northbound off-ramp.

Recommendations and illustrations for bicycle crossings at interchange entrance and exit ramps are cited below from the TRB, National Cooperative Highway Research Program, *NCHRP Report 500, Guidance for Implementation of the AASHTO Strategic Highway Safety Plan, Volume 18: A Guide for Reducing Collisions Involving Bicycles* (TRB, 2008).

“Roadways at interchange areas often require bicyclists to perform merging, weaving, or crossing maneuvers with ramp vehicles. These conflict points are hazardous to bicyclists because there is often a wide disparity in speed between the motor vehicle traffic and bicyclists. [Figures 6-3 through 6-5] provide guidance for delineating bicycle lanes through interchange areas.”

“The AASHTO *Bicycle Guide* (1999) presents two treatments (Figure 6-3) related to the design of bicycle lanes at interchange exit ramps. Option 1 redirects the bicycle lane towards the channelized roadway, intersecting at a 90-degree angle. Bicyclists are to yield to the motor vehicle traffic on the channelized roadway before crossing. In Option 2, striping of the bicycle lane is discontinued to indicate to bicyclists that they must merge with entering traffic from the channelized roadway (i.e., the exit ramp).”

“[Figure 6-4] presents an optional treatment for marking bicycle lanes near interchange entrance ramps. In Option 1, the bicycle lane continues along the right side of the entrance roadway, and then bicyclists cross at 90 degrees at a

designated location along the channelized roadway to return to the bicycle lane. This treatment may be preferable to bicyclists who prefer to use crosswalks to negotiate intersections. In Option 2, striping of the bicycle lane is discontinued to indicate to bicyclists that they must weave through traffic entering the channelized roadway (i.e., the entrance ramp)."

"[Figure 6-5] presents another optional treatment for marking bicycle lanes near interchange entrance ramps, and in this option the bicycle lane is separated from the roadway for a short distance along the channelized roadway in order to loop around and intersect the channelized roadway close to a 90 degree angle."

(Figures 6-6 through 6-18 can be found at the end of this section.)

FIGURE 6-3
Bicycle Lanes Crossing Interchange Exit Ramps (TRB, 2008)

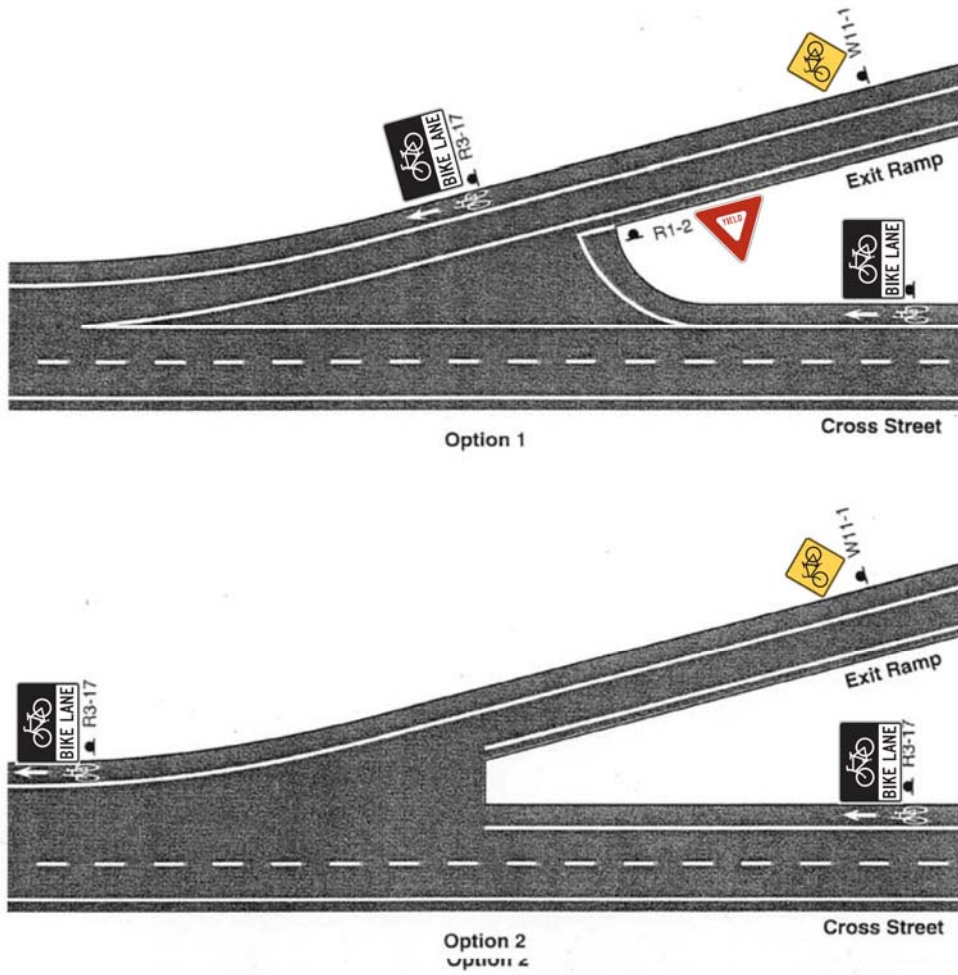
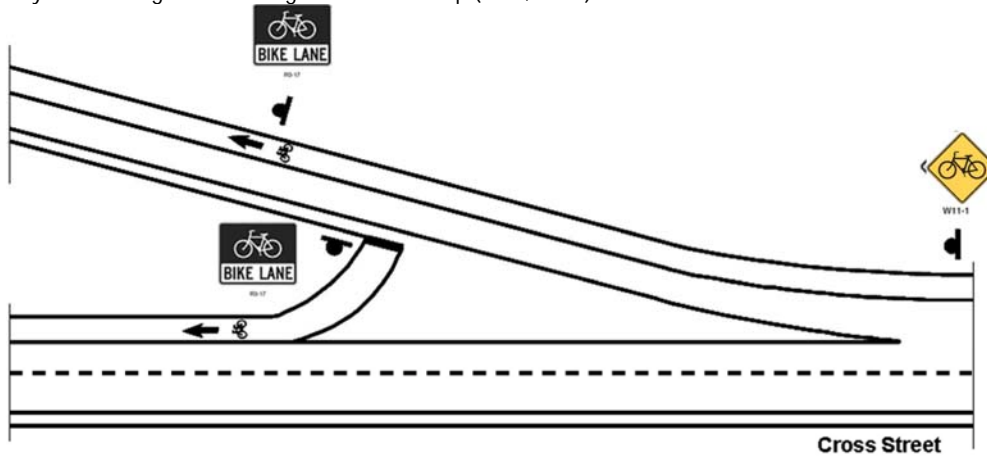
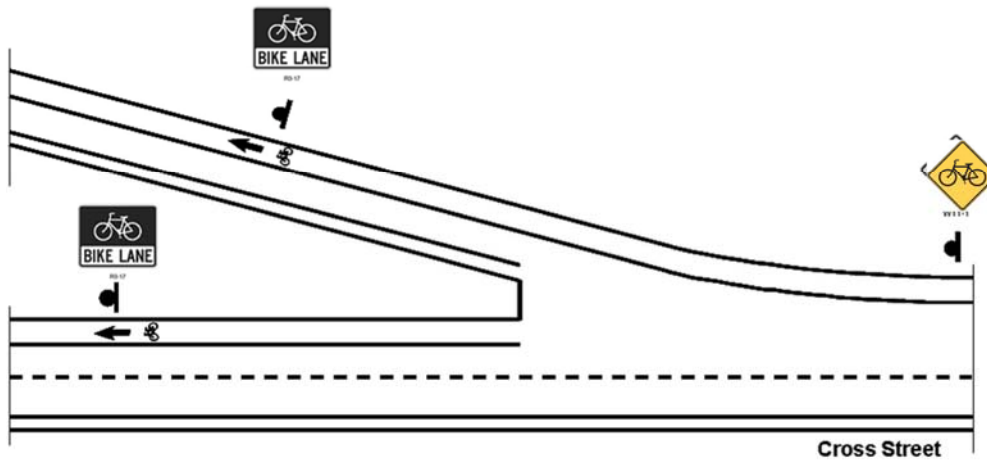


FIGURE 6-4
Bicycle Crossing of Interchange Entrance Ramp (TRB, 2008)

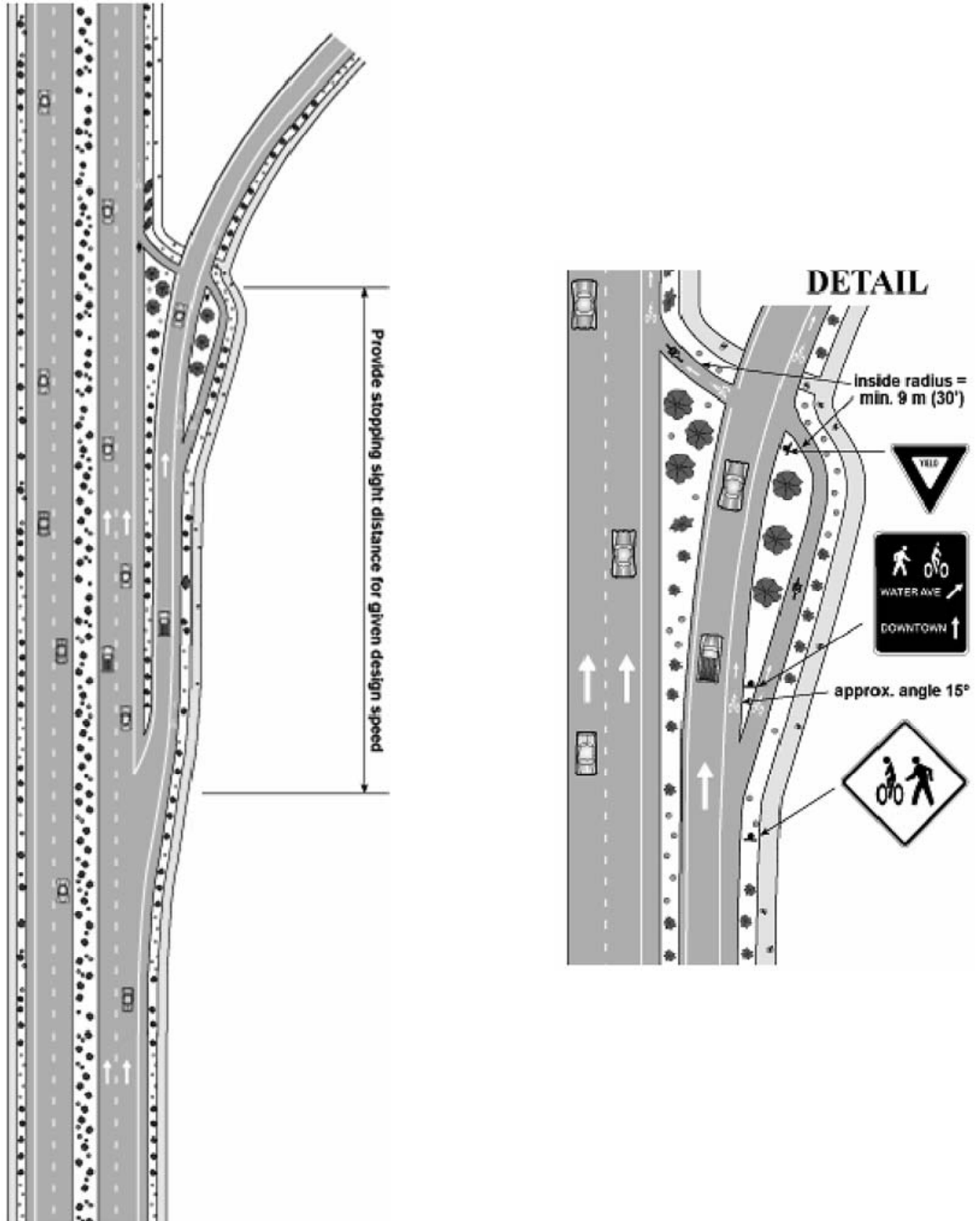


Option 1



Option 2

FIGURE 6-5
Bicycle Crossing of Interchange Entrance Ramp where a Bicycle Lane Becomes a Separated Path (TRB, 2008)



6.1.5 Emergency Vehicle Response (Score: No Impact or Change)

The overall score of “no impact or change” for emergency vehicle response is a composite of the performance measures described below.

Emergency Vehicle Response Time (Score: No Impact or Change)

Emergency vehicle response time might improve slightly with overall improvements to system-wide travel time, but not significantly enough to merit a score higher than “no impact or change.”

Redundancy (for Incident Management) (Score: No Impact or Change)

No new redundant routes are proposed with this concept.

6.1.6 Environmental Preservation (Score: No Impact or Change)

The overall score of “no impact or change” for environmental preservation is a composite of the performance measures described below.

Noise Impacts (Score: No Impact or Change)

No changes to noise impacts are anticipated with this concept.

Visual Impacts (Score: No Impact or Change)

No new ramps or structures are proposed with this concept that would create a visual obstruction.

Air Quality/Climate Change (Score: Positive Effect)

Reductions in congestion and vehicular idling times are anticipated to have a positive effect on air quality and climate change.

Disturbed Land (Score: Minor Negative Effect)

A total of 26 acres of land would be disturbed either permanently or temporarily during construction as a result of this concept.

6.1.7 Community Consistency (Score: Minor Positive Effect)

The overall score of “minor positive effect” for community consistency is a composite of the performance measures described below.

Neighborhood Preservation (Score: No Impact or Change)

This concept does not involve any changes that would affect adjacent neighborhoods.

Residential and Business Relocations (Score: No Impact or Change)

This concept does not involve any residential or business relocations.

Economic Development (Score: Positive Effect)

The St. Francis Drive interchange is a key gateway to state government offices and a significant number of commercial and retail properties. Improvements to this interchange

will allow a greater number of vehicles to safely and efficiently access the St. Francis Drive corridor; thereby, enhancing the prospects for economic development in the area.

Land Use and Transportation Plan Consistency (Score: No Impact or Change)

No changes to land use are anticipated as a result of this concept.

6.1.8 Financial Feasibility (Score: Minor Positive Effect)

The overall score of “minor positive effect” for financial feasibility is a composite of the performance measures described below. In this case, “minor positive effect” is better understood if described as financial feasibility on a scale of 1 to 5, with 5 equal to most financially feasible and 1 equal to least financially feasible. This concept would receive a score of 4.

Project Cost (Score: Minor Negative Effect)

The estimated cost for this concept is \$19 million (using 2009 dollars, and based on a conceptual level layout).

Funding Availability (Score: Positive Effect)

The Statewide Transportation Improvement Program has programmed funds in the amount of \$7,500,000 for bridge replacement and rehabilitation at the St. Francis Drive and Cerrillos Road interchanges (CN: D5010).

6.2 Cerrillos Road Interchange Improvements

This concept proposes improvements to the I-25 interchange at Cerrillos Road, as shown on Figure 6-6 and described and evaluated in this section.

6.2.1 Multi-modal Mobility (Score: Minor Positive Effect)

The overall score of “minor positive effect” for multi-modal mobility is a composite of the performance measures described below.

Transit Reliability (Score: No Impact or Change)

This concept does not include improvements that would enhance transit reliability significantly. Overall improvements to vehicular mobility that could be achieved by improvements to the interchange would also improve transit operations, but not enough to merit scoring this performance measure differently from “no impact or change.”

Bicycle/Pedestrian Connectivity (Score: Minor Positive Effect)

Minor improvements to bicycle and pedestrian connectivity would be realized by the addition of sidewalks, bike lanes, and improved bike and pedestrian crossings at the ramp terminals and merge points.

6.2.2 Vehicle Mobility (Score: Minor Positive Effect)

The overall score of “minor positive effect” for vehicular mobility is a composite of the performance measures described below.

Vehicular Connectivity (Score: No Impact or Change)

No new connections are proposed with this option.

Access to I-25 (Score: Minor Positive Effect)

By improving operations at the Cerrillos Road interchange, access to I-25 is slightly improved.

Volume/Capacity (Score: Minor Positive Effect)

The primary operational problem with this interchange is the convergence of the northbound and southbound off-ramps to northbound Cerrillos Road. These two ramps merge into one lane, which then merges onto Cerrillos Road approximately 500 feet south of the signalized intersection at Beckner Road (and Frontage Road). Vehicles turning left onto the Frontage Road have less than 200 feet from the end of the ramp to cross two lanes to get into the left-turn bay, creating unsafe weaving and slowing the flow of traffic. The V/C in this area is 0.84.

To rectify these safety and operational concerns, this concept would tighten the turn radius of the southbound off-ramp and move the merge point with Cerrillos Road 725 feet south of the current merge point. Furthermore, the northbound off-ramp would be separated from the southbound off-ramp by changing it to a loop ramp south of I-25. This separates traffic originating from northbound and southbound I-25, and creates a greater distance between the merge points with Cerrillos Road and the signalized intersection at Beckner Road. These improvements reduce the afternoon peak hour V/C just south of Beckner Road from 0.84 to 0.75.

System-wide Travel Time (Score: no impact or change)

The improvements described above will provide localized improvements to travel time, but likely offer minimal to no improvements to system-wide travel time (see Table 4-3).

6.2.3 Vehicular Safety (Score: Positive Effect)

Significant improvements to vehicular safety would be achieved by the following improvements:

- Tighten the turn radius of the southbound I-25 off-ramp to Cerrillos Road to shift it south of Beckner Road an additional 725 feet.
- Change the northbound off-ramp to a loop ramp located south of I-25 to separate it from the southbound off-ramp and move it much farther south of Beckner Road.
- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.
- Replace deficient bridge structures.
- Add street lighting.
- Make other geometric improvements to the ramps in accordance with NMDOT and AASHTO standards.

6.2.4 Pedestrian/Bicycle Safety (Score: Minor Positive Effect)

Pedestrian and bicycle safety would be improved by the addition of street lighting, sidewalks, bike lanes, and improved bike and pedestrian crossings at the ramp terminals and merge points. Recommendations and illustrations for bicycle crossings at interchange entrance and exit ramps are described in Section 6.1.4.

6.2.5 Emergency Vehicle Response (Score: No Impact or Change)

The overall score of “no impact or change” for emergency vehicle response is a composite of the performance measures described below.

Emergency Vehicle Response Time (Score: No Impact or Change)

Emergency vehicle response time might improve slightly with overall improvements to system-wide travel time, but not significantly enough to merit a score higher score.

Redundancy (for Incident Management) (Score: No Impact or Change)

No new redundant routes are proposed with this concept.

6.2.6 Environmental Preservation (Score: No Impact or Change)

The overall score of “no impact or change” for environmental preservation is a composite of the performance measures described below.

Noise Impacts (Score: No Impact or Change)

No changes to noise impacts are anticipated with this concept.

Visual Impacts (Score: No Impact or Change)

No new ramps or structures are proposed with this concept that would create a visual obstruction.

Air Quality/Climate Change (Score: Minor Positive Effect)

Reductions in congestion and vehicular idling times are anticipated to have a minor positive effect on air quality and climate change.

Disturbed Land (Score: Minor Negative Effect)

A total of 26 acres of land would be disturbed either permanently or temporarily during construction as a result of this concept.

6.2.7 Community Consistency (Score: No Impact or Change)

The overall score of “no impact or change” for community consistency is a composite of the performance measures described below.

Neighborhood Preservation (Score: No Impact or Change)

This concept does not involve any changes that would affect adjacent neighborhoods.

Residential and Business Relocations (Score: No Impact or Change)

This concept does not involve any residential or business relocations.

Economic Development (Score: Minor Positive Effect)

The Cerrillos Road interchange is a gateway to a significant number of commercial and retail properties. Improvements to this interchange will allow a greater number of vehicles to safely and efficiently access the Cerrillos Road corridor; thereby, enhancing the prospects for economic development in the area.

Land Use and Transportation Plan Consistency (Score: No Impact or Change)

No changes to land use are anticipated as a result of this concept.

6.2.8 Financial Feasibility (Score: Minor Positive Effect)

The overall score of “minor positive effect” for financial feasibility is a composite of the performance measures described below. In this case, “minor positive effect” is better understood if described as financial feasibility on a scale of 1 to 5, with 5 equal to most financially feasible and 1 equal to least financially feasible. This concept would receive a score of 4.

Project Cost (Score: No Impact or Change)

The estimated cost for this concept is \$14.8 million (using 2009 dollars, and based on a conceptual level layout).

Funding Availability (Score: Minor Positive Effect)

The Statewide Transportation Improvement Program (STIP) has programmed funds in the amount of \$7,500,000 for bridge replacement and rehabilitation at the St. Francis Drive and Cerrillos Road interchanges (CN: D5010).

6.3 NM 466/Old Pecos Trail Interchange Improvements

This concept proposes improvements to the I-25 interchange at NM 466, as shown on Figure 6-7 and described and evaluated in this section.

6.3.1 Multi-Modal Mobility (Score: No Impact or Change)

The overall score of “no impact or change” for multi-modal mobility is a composite of the performance measures described below.

Transit Reliability (Score: No Impact or Change)

This concept does not include improvements that would enhance transit reliability significantly. Overall improvements to vehicular mobility that could be achieved by improvements to the NM 466 interchange would also improve transit operations, but not enough to merit scoring this performance measure differently from “no impact or change.”

Bicycle/Pedestrian Connectivity (Score: No Impact or Change)

The addition of sidewalks and bike lanes on NM 466 through the interchange should be considered in the future when the bridge structures need to be replaced, and are not included in this improvement concept.

6.3.2 Vehicle Mobility (Score: Minor Positive Effect)

The overall score of “minor positive effect” for vehicular mobility is a composite of the performance measures described below.

Vehicular Connectivity (Score: No Impact or Change)

No new connections are proposed with this option.

Access to I-25 (Score: Minor Positive Effect)

By improving operations at the NM 466 interchange, access to I-25 is slightly improved.

Volume/Capacity (Score: Positive Effect)

The primary operational problem at this interchange occurs on the southbound off-ramp, which will sometimes back up onto I-25 during the morning commute. The ramp terminal at NM 466 is only 500 feet south of the signalized intersection at Rodeo Road and Old Las Vegas Highway. Drivers who want to turn left onto Rodeo Road are supposed to stay to the left at the ramp terminus and make a right turn across two lanes of traffic directly into the Rodeo Road left-turn bay. Many drivers ignore the signing and striping and instead use the right-turn bypass lane at the ramp terminus, which is meant for northbound NM 466 through traffic, and weave across two lanes of traffic to turn left onto Rodeo Road. To make that illegal left turn into Rodeo Road, drivers must slow down to wait for breaks in oncoming traffic; thereby, backing up traffic on the ramp, and creating unsafe conditions.

To rectify these safety and operational concerns with the southbound off-ramp, this concept proposes to add barriers to the Rodeo Road left-turn pocket to prohibit vehicles from entering the pocket other than at the entrance. The lanes at the ramp terminus would be separated with a 250-foot island to allow sufficient queuing storage for those vehicles turning right on NM 466 and entering the Rodeo Road left-turn pocket.

System-wide Travel Time (Score: Minor Positive Effect)

The improvements described above should prevent vehicles on the southbound off-ramp from backing-up onto I-25; thereby, providing minor improvements to system-wide travel time (see Table 4-3).

6.3.3 Vehicular Safety (Score: Positive Effect)

Significant improvements to vehicular safety would be achieved by the following improvements:

- Add barriers to the Rodeo Road left-turn pocket to prohibit vehicles from entering the pocket other than at the entrance.

- Separate the lanes at the ramp terminus with a 250-foot island to allow sufficient queuing storage for those vehicles turning right on NM 466 and entering the Rodeo Road left-turn pocket.
- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.
- Add street lighting.
- Make other geometric improvements to the ramps in accordance with NMDOT and AASHTO standards.

6.3.4 Pedestrian/Bicycle Safety (Score: Minor Positive Effect)

Pedestrian and bicycle safety would be improved by the addition of street lighting, sidewalks, bike lanes, and improved bike and pedestrian crossings at the ramp terminals and merge points. Recommendations and illustrations for bicycle crossings at interchange entrance and exit ramps are described in Section 6.1.4.

6.3.5 Emergency Vehicle Response (Score: No Impact or Change)

The overall score of “no impact or change” for emergency vehicle response is a composite of the performance measures described below.

Emergency Vehicle Response Time (Score: No Impact or Change)

Emergency vehicle response time might improve slightly with overall improvements to system-wide travel time, but not significantly enough to merit a score higher score.

Redundancy (for Incident Management) (Score: No Impact or Change)

No new redundant routes are proposed with this concept.

6.3.6 Environmental Preservation (Score: No Impact or Change)

The overall score of “no impact or change” for environmental preservation is a composite of the performance measures described below.

Noise Impacts (Score: No Impact or Change)

No changes to noise impacts are anticipated with this concept.

Visual Impacts (Score: No Impact or Change)

No new ramps or structures are proposed with this concept that would create a visual obstruction.

Air Quality/Climate Change (Score: Positive Effect)

Reductions in congestion and vehicular idling times are anticipated to have a positive effect on air quality and climate change.

Disturbed Land (Score: Minor Negative Effect)

A total of 32 acres of land would be disturbed either permanently or temporarily during construction as a result of this concept.

6.3.7 Community Consistency (Score: No Impact or Change)

The overall score of “no impact or change” for community consistency is a composite of the performance measures described below.

Neighborhood Preservation (Score: No Impact or Change)

This concept does not involve any changes that would affect adjacent neighborhoods.

Residential and Business Relocations (Score: No Impact or Change)

This concept does not involve any residential or business relocations.

Economic Development (Score: No Impact or Change)

No changes to economic development are anticipated as a result of this concept.

Land Use and Transportation Plan Consistency (Score: No Impact or Change)

No changes to land use are anticipated as a result of this concept.

6.3.8 Financial Feasibility (Score: No Impact or Change)

The overall score of “no impact or change” for financial feasibility is a composite of the performance measures described below. In this case, “minor negative effect” is better understood if described as financial feasibility on a scale of 1 to 5, with 5 equal to most financially feasible and 1 equal to least financially feasible. This concept would receive a score of 3.

Project Cost (Score: Minor Positive Effect)

The estimated cost for this concept is \$6.7 million (using 2009 dollars, and based on a conceptual level layout).

Funding Availability (Score: Negative Effect)

No funding has been programmed for this concept.

6.4 NM 599/Veterans Memorial Highway Interchange Improvements

This concept proposes improvements to the I-25 interchange at NM 599, as shown on Figure 6-8 and described and evaluated in this section. These improvements are consistent with recommendations from the NM 599 Corridor Study, which call for a grade separated frontage road over NM 599 just north of I-25. The southbound on- and off-ramps are tightened to fit under the proposed structures.

6.4.1 Multi-Modal Mobility (Score: No Impact or Change)

The overall score of “no impact or change” for multi-modal mobility is a composite of the performance measures described below.

Transit Reliability (Score: No Impact or Change)

This concept does not include improvements that would enhance transit reliability significantly. Overall improvements to vehicular mobility that could be achieved by improvements to the interchange would also improve transit operations, but not enough to merit scoring this performance measure differently from “no impact or change.”

Bicycle/Pedestrian Connectivity (Score: No Impact or Change)

The addition of sidewalks and bike lanes on NM 599 through the interchange should be considered in the future when the bridge structures need to be replaced, and are not included in this improvement concept.

6.4.2 Vehicle Mobility (Score: No Impact or Change)

The overall score of “minor positive effect” for vehicular mobility is a composite of the performance measures described below.

Vehicular Connectivity (Score: No Impact or Change)

No new connections are proposed with this option.

Access to I-25 (Score: Minor Positive Effect)

By improving operations at the NM 599 interchange, access to I-25 is slightly improved.

Volume/Capacity (Score: No Impact or Change)

No significant V/C problems are anticipated at this interchange. The improvements recommended for this interchange are primarily safety enhancements.

System-wide Travel Time (Score: No Impact or Change)

The improvements described above will provide localized improvements to travel time, but likely offer minimal to no improvements to system-wide travel time (see Table 4-3).

6.4.3 Vehicular Safety (Score: Minor Positive Effect)

Improvements to vehicular safety would be achieved by the following improvements:

- Tighten the southbound off-ramp to move it farther south of the signalized intersection at the frontage road.
- Add an acceleration lane on northbound NM 599 from the southbound I-25 off-ramp, and a deceleration lane on southbound NM 599 approaching the southbound I-25 on-ramp.
- Lengthen the on-ramps to allow greater distance to accelerate and safely merge onto I-25.

- Add street lighting.
- Make other geometric improvements to the ramps in accordance with NMDOT and AASHTO standards.

6.4.4 Pedestrian/Bicycle Safety (Score: Minor Positive Effect)

Pedestrian and bicycle safety would be improved by the addition of street lighting. The addition of sidewalks and bike lanes on NM 599 through the interchange should be considered in the future when the bridge structures need to be replaced, and are not included in this improvement concept.

6.4.5 Emergency Vehicle Response (Score: No Impact or Change)

The overall score of “no impact or change” for emergency vehicle response is a composite of the performance measures described below.

Emergency Vehicle Response Time (Score: No Impact or Change)

Emergency vehicle response time might improve slightly with overall improvements to system-wide travel time, but not significantly enough to merit a score higher score.

Redundancy (for Incident Management) (Score: No Impact or Change)

No new redundant routes are proposed with this concept.

6.4.6 Environmental Preservation (Score: No Impact or Change)

The overall score of “no impact or change” for environmental preservation is a composite of the performance measures described below.

Noise Impacts (Score: No Impact or Change)

No changes to noise impacts are anticipated with this concept.

Visual Impacts (Score: No Impact or Change)

No new ramps or structures are proposed with this concept that would create a visual obstruction.

Air Quality/Climate Change (Score: No Impact or Change)

Significant reductions in congestion and vehicular idling times are not anticipated as a result of improvements proposed at the NM 599 interchange, resulting in no changes to air quality and climate change.

Disturbed Land (Score: Minor Negative Effect)

A total of 8 acres of land would be disturbed either permanently or temporarily during construction as a result of this concept.

6.4.7 Community Consistency (Score: No Impact or Change)

The overall score of “no impact or change” for community consistency is a composite of the performance measures described below.

Neighborhood Preservation (Score: No Impact or Change)

This concept does not involve any changes that would affect adjacent neighborhoods.

Residential and Business Relocations (Score: No Impact or Change)

This concept does not involve any residential or business relocations.

Economic Development (Score: Minor Positive Effect)

The NM 599 interchange is a gateway to a significant number of proposed commercial and retail developments. Improvements to this interchange will allow a greater number of vehicles to safely and efficiently access these developments; thereby, enhancing the prospects for economic development in the area.

Land Use and Transportation Plan Consistency (Score: No Impact or Change)

No changes to land use are anticipated as a result of this concept.

6.4.8 Financial Feasibility (Score: No Impact or Change)

The overall score of “no impact or change” for financial feasibility is a composite of the performance measures described below. In this case, “minor negative effect” is better understood if described as financial feasibility on a scale of 1 to 5, with 5 equal to most financially feasible and 1 equal to least financially feasible. This concept would receive a score of 3.

Project Cost (Score: Positive Effect)

The estimated cost for this concept is \$2.7 million (using 2009 dollars, and based on a conceptual level layout).

Funding Availability (Score: Negative Effect)

No funding has been programmed for this concept.

6.5 I-25 Auxiliary Lanes between NM 599/Veterans Memorial Highway and NM 466/Old Pecos Trail

This concept proposes adding auxiliary lanes to both directions of I-25 between NM 599 and NM 466, as shown on Figure 6-9 through 6-12. Auxiliary lanes provide additional capacity without the added cost of reconstructing the interchanges.

6.5.1 Multi-modal Mobility (Score: Minor Positive Effect)

The overall score of “minor positive effect” for multi-modal mobility is a composite of the performance measures described below.

Transit Reliability (Score: Minor Positive Effect)

Overall improvements to vehicular mobility that would be achieved by adding auxiliary lanes would also improve transit operations.

Bicycle/Pedestrian Connectivity

No new bicycle or pedestrian connections are proposed with this option.

6.5.2 Vehicle Mobility (Score: Minor Positive Effect)

The overall score of “minor positive effect” for vehicular mobility is a composite of the performance measures described below.

Vehicular Connectivity (Score: No Impact or Change)

No new connections are proposed with this option.

Access to I-25 (Score: Minor Positive Effect)

Access to I-25 is inhibited when congestion increases. Therefore, improving capacity on the freeway would increase vehicle accessibility to I-25.

Volume/Capacity (Score: Positive Effect)

Projected traffic volumes are anticipated to exceed current capacity on I-25 between the interchanges at St. Francis Drive and Cerrillos Road. A new interchange at Richards Avenue would increase volumes even further, and would likely increase the number of vehicles using I-25 to travel between Richards Avenue and the adjacent interchanges. Auxiliary lanes between the interchanges at St. Francis Drive and Cerrillos Road would service these trips and add the needed capacity. The V/C would drop from 0.97 to 0.78 on southbound I-25 between St. Francis Drive and Richards Avenue during the afternoon peak hours – the most congested segment at the busiest time.

Volumes on the freeway segments between NM 599 and Cerrillos Road, and between St. Francis Drive and NM 466 are not projected to exceed capacity; however, because of the grade on northbound I-25, the northbound auxiliary lane from NM 599 to NM 466 will improve operations by providing a greater distance for slow-moving vehicles to reach freeway speeds before merging.

System-wide Travel Time (Score: Positive Effect)

Improvements to system-wide travel time (see Table 4-3) are anticipated as a result of reduction in congestion on the mainline.

6.5.3 Vehicular Safety (Score: Minor Positive Effect)

Auxiliary lanes provide additional distance for safely merging onto the freeway, as well as additional capacity that typically results in reduced congestion and crashes.

6.5.4 Pedestrian/Bicycle Safety (Score: No Impact or Change)

No change in pedestrian/bicycle safety is anticipated as a result of this concept.

6.5.5 Emergency Vehicle Response (Score: Minor Positive Effect)

The overall score of “minor positive effect” for emergency vehicle response is a composite of the performance measures described below.

Emergency Vehicle Response Time (Score: Minor Positive Effect)

Emergency vehicle response time is anticipated to improve slightly as a result of reduced congestion on the mainline and overall improvements to system-wide travel time (see Table 4-3).

Redundancy (for Incident Management) (Score: No Impact or Change)

No new redundant routes are proposed with this concept.

6.5.6 Environmental Preservation (Score: No Impact or Change)

The overall score of “no impact or change” for environmental preservation is a composite of the performance measures described below.

Noise Impacts (Score: Negative Effect)

Adding auxiliary lanes is equivalent to widening the freeway between the interchanges; thereby, moving the freeway slightly closer to sensitive receptor locations. Additional vehicles traveling on I-25 could also increase the noise level.

Visual Impacts (Score: No Impact or Change)

No new ramps or structures are proposed with this concept that would create a visual obstruction.

Air Quality/Climate Change (Score: Positive Effect)

Reductions in congestion and travel time are anticipated to have a positive effect on air quality and climate change.

Disturbed Land (Score: Negative Effect)

A total of 78 acres of land would be disturbed either permanently or temporarily during construction as a result of this concept.

6.5.7 Community Consistency (Score: No Impact or Change)

The overall score of “no impact or change” for community consistency is a composite of the performance measures described below.

Neighborhood Preservation (Score: Minor Positive Effect)

Auxiliary lanes, in conjunction with a new interchange at Richards Avenue, would provide an alternate means of east-west travel to and from Richards Avenue and the Santa Fe Community College District, and is projected to reduce the number of vehicles using residential streets and arterials.

Residential and Business Relocations (Score: No Impact or Change)

This concept does not involve any residential or business relocations.

Economic Development (Score: No Impact or Change)

No changes to economic development are anticipated as a result of this concept.

Land Use and Transportation Plan Consistency (Score: No Impact or Change)

No changes to land use are anticipated as a result of this concept.

6.5.8 Financial Feasibility (Score: Minor Negative Effect)

The overall score of “minor negative effect” for financial feasibility is a composite of the performance measures described below. In this case, “minor negative effect” is better understood if described as financial feasibility on a scale of 1 to 5, with 5 equal to most financially feasible and 1 equal to least financially feasible. This concept would receive a score of 2.

Project Cost (Score: Minor Negative Effect)

The estimated cost for this concept is \$22.9 million (using 2009 dollars, and based on a conceptual level layout).

Funding Availability (Score: Negative Effect)

No funding has been programmed for this concept.

6.6 Richards Avenue Interchange

This concept proposes adding a new interchange to I-25 at Richards Avenue. This study only evaluated whether or not an interchange at Richards Avenue should be included in the 2005 MTP, and did not fully explore or evaluate the optimum interchange configuration. The preferred configuration will be considered during the environmental and preliminary design phases of project development, should the concept be included in the 2005 MTP and receive funding.

Figure 6-13 shows one possible configuration that minimizes the amount of right-of-way (ROW) needed by realigning the mainline to allow the ramps to be constructed mostly within existing ROW. This configuration also uses roundabouts at the ramp terminals, consistent with stakeholder desires to have free-flow ramps on I-25. However, this configuration is more costly and less popular with drivers.

6.6.1 Multi-modal Mobility (Score: Minor Positive Effect)

The overall score of “minor positive effect” for multi-modal mobility is a composite of the performance measures described below.

Transit Reliability (Score: Positive Effect)

A new interchange adds a new connection within the road network and more options for transit routes, especially to service the Santa Fe Community College District. In addition, overall improvements to vehicular mobility that would be achieved by adding an interchange at Richards Avenue would also improve transit operations.

Bicycle/Pedestrian Connectivity (Score: Minor Negative Effect)

Introducing ramp terminals and additional motorized vehicles to Richards Avenue would reduce the ability of cyclists and pedestrians to travel along Richards Avenue. This would

be mitigated with the addition of bike lanes and sidewalks on Richards Avenue through the interchange, which do not exist at present.

6.6.2 Vehicle Mobility (Score: Positive Effect)

The overall score of “positive effect” for vehicular mobility is a composite of the performance measures described below.

Vehicular Connectivity (Score: Positive Effect)

A new interchange adds a new connection within the road network.

Access to I-25 (Score: Positive Effect)

A new interchange adds a new access point to I-25—one of the primary purposes of this concept.

Volume/Capacity (Score: positive effect)

The impacts on travel demand that a new interchange at Richards Avenue would have on both I-25 and the surrounding road network were evaluated. Some traffic would be diverted to I-25 from the surrounding road network, increasing congestion on I-25 and reducing congestion on the local streets. The additional volume on I-25 would be mitigated with the addition of auxiliary lanes on I-25 and the interchange improvements at St. Francis Drive.

System-wide Travel Time (Score: Minor Positive Effect)

A reduction in vehicle miles traveled would be realized because of this new connection in the road network; thereby, reducing the system-wide travel time (see Table 4-3).

6.6.3 Vehicular Safety (Score: Minor Negative Effect)

A new interchange will create additional conflict points on I-25 and Richards Avenue. These will be mitigated by following the latest standards for interchange design and safety, and designing sections to accommodate projected traffic volume.

6.6.4 Pedestrian/Bicycle Safety (Score: Minor Negative Effect)

Introducing ramp terminals and additional motorized vehicles to Richards Avenue as a result of this new interchange would reduce the ability of cyclists and pedestrians to safely travel along Richards Avenue. This would be mitigated with the addition of street lighting, bike lanes, and sidewalks on Richards Avenue through the interchange—which do not exist at present. Section 6.1.4 of this report addresses the types of safety enhancements that would be recommended for this interchange.

6.6.5 Emergency Vehicle Response (Score: Positive Effect)

An interchange at Richards Avenue would contribute significantly more to emergency vehicle response than any of the other concepts under consideration, as described below.

Emergency Vehicle Response Time (Score: Positive Effect)

Because of the recent construction of the Rail Runner line in the median of I-25, access for emergency vehicles to the median and to any existing frontage roads has been severely limited. This significantly increases the ability of the Emergency Management System and law enforcement to access I-25 and the time required to respond to incidents and crashes. There is only one emergency vehicle crossing location along the 5-mile stretch between Cerrillos Road and St. Francis Drive that is difficult for emergency vehicles to traverse because of a locked gate and steep grades. An interchange between these two existing interchanges will open up access to more points along both sides of I-25 for emergency vehicles.

Redundancy (Score: Positive Effect)

This additional access point creates opportunities for redundant detour routes.

6.6.6 Environmental Preservation (Score: No Change or Impact)

The overall score of “no change or impact” for environmental preservation is a composite of the performance measures described below.

Noise Impacts (Score: No Impact or Change)

No changes to noise impacts are anticipated with this concept.

Visual Impacts (Score: No Impact or Change)

The new ramps proposed for the Richards Avenue interchange would be adjacent to the existing I-25 mainline and not create additional visual obstructions.

Air Quality/Climate Change (Score: Positive Effect)

Reductions in system-wide travel times attributable to an interchange at Richards Avenue are anticipated to have a positive effect on air quality and climate change.

Disturbed Land (Score: Negative Effect)

A total of 72 acres of land would be disturbed either permanently or temporarily during construction as a result of this concept.

6.6.7 Community Consistency (Score: Minor Positive Effect)

The overall score of “minor positive effect” for community consistency is a composite of the performance measures described below.

Neighborhood Preservation (Score: Minor Positive Effect)

Neighborhoods immediately adjacent to this interchange could experience some disruption as a result of increased traffic volumes in the area. However, even without a new interchange, it is anticipated that Richards Avenue will need to be widened to four lanes in the future to accommodate projected traffic volumes. Additionally, other surrounding neighborhoods would benefit from reduced traffic on local roads that is diverted to I-25.

Residential and Business Relocations (Score: No Impact or Change)

This concept does not involve any residential or business relocations.

Economic Development (Score: Positive Effect)

An interchange at Richards Avenue would provide additional access to the Santa Fe Community College District, Las Soleras development, and other developments and businesses in the area; thereby, enhancing the prospects for economic development.

Land Use and Transportation Plan Consistency (Score: Positive Effect)

This concept is recommended in *The Santa Fe Community College District Plan* (Santa Fe County Board of County Commissioners and Santa Fe Extraterritorial Zoning Authority, 2000).

6.6.8 Financial Feasibility (Score: Negative Effect)

The overall score of “negative effect” for financial feasibility is a composite of the performance measures described below. In this case, “negative effect” is better understood if described as financial feasibility on a scale of 1 to 5, with 5 equal to most financially feasible and 1 equal to least financially feasible. This concept would receive a score of 1, or least financially feasible because of the high cost and lack of available funding to implement it.

Project Cost (Score: negative effect)

The estimated cost for the configuration shown on Figure 6-13 for this concept is \$31.2 million (using 2009 dollars, and based on a conceptual level layout). The cost will vary by configuration, ranging from \$15 million to \$35 million.

Funding Availability (Score: Negative Effect)

No funding has been programmed for this concept.

6.7 Governor Miles Road Extension

This concept proposes extending Governor Miles Road from its terminus just east of Camino Carlos Rey, connecting to Galisteo Street and continuing east across the Rail Runner to Rodeo Park Drive (see Figure 6-14). This concept is one of three concepts referred to in this study as system connections because they provide additional connections to the regional transportation network.

6.7.1 Multi-modal Mobility (Score: Positive Effect)

The overall score of “positive effect” for multi-modal mobility is a composite of the performance measures described below.

Transit Reliability (Score: Minor Positive Effect)

An additional link in the transportation network provides another opportunity for new or improved transit routes.

Bicycle/Pedestrian Connectivity (Score: Positive Effect)

An extension of Governor Miles Road would include bike lanes and sidewalks, and provide safe and convenient east-west access for cyclists and pedestrians north of I-25 from St.

Francis Drive to Richards Avenue. A connection could also be made with the Camino Carlos Rey extension across I-25 to provide access to the Santa Fe Community College District.

6.7.2 Vehicle Mobility (Score: No Impact or Change)

The overall score of “no impact or change” for vehicle mobility is a composite of the performance measures described below.

Vehicular Connectivity (Score: Minor Positive Effect)

System connectivity is one of the primary considerations for this concept. This concept would provide an alternate east-west connection to Rodeo Road.

Access to I-25 (Score: No Impact or Change)

No additional access to I-25 is proposed with this option.

Volume/Capacity (Score: No Impact or Change)

This measure was considered jointly with all three system connections. An analysis of the V/C, as projected by the model, at key freeway, ramp, and arterial segments (see Table 4-2) suggested that the best overall improvement to congestion on the surrounding road network could be realized by constructing the system connections and the Richards Avenue interchange. The system connections, without an interchange at Richards Avenue, improved congestion at these key segments, but not as much as the interchange without the system connections. Therefore, the system connections are not projected to provide as much system-wide congestion relief as would a new interchange at Richards Avenue. The benefit of adding the system connections together with the Richards Avenue interchange would not result in significant improvements over just adding the Richards Avenue interchange alone.

An analysis of the traffic volumes at same segments (see Table 4-2), showed that the system connections were not anticipated to displace enough traffic projected to use Richards Avenue, to prevent Richards Avenue from needing to be widened in the future. A four-lane Richards Avenue is anticipated to accommodate the north-south traffic across I-25 between St. Francis Drive and Cerrillos Road.

System-wide Travel Time (Score: No Impact or Change)

This concept offers minimal to no improvements to system-wide travel time (see Table 4-3).

6.7.3 Vehicular Safety (Score: No Impact or Change)

Vehicular safety is not anticipated to change as a result of this concept.

6.7.4 Pedestrian/Bicycle Safety (Score: Positive Effect)

An extension of Governor Miles Road would include bike lanes and sidewalks, and provide safe and convenient east-west access for cyclists and pedestrians north of I-25 from St. Francis Drive to Richards Avenue.

6.7.5 Emergency Vehicle Response (Score: Minor Positive Effect)

The overall score of “minor positive effect” for emergency vehicle response is a composite of the performance measures described below.

Emergency Vehicle Response Time (Score: Minor Positive Effect)

Emergency vehicle response time is anticipated to improve slightly as a result of this additional system connection, which will also provide additional access to the medical facility located at the end of Rodeo Park Drive.

Redundancy (for Incident Management) (Score: Minor Positive Effect)

This extension provides a new connection adjacent to I-25 that could serve as a possible detour for incident management.

6.7.6 Environmental Preservation (Score: No Impact or Change)

The overall score of “no impact or change” for environmental preservation is a composite of the performance measures described below.

Noise Impacts (Score: Minor Negative Effect)

Extending Governor Miles Road could increase the noise level at sensitive receptor locations; however, speeds would be low and most of the extension would be adjacent to I-25.

Visual Impacts (Score: No Impact or Change)

No new structures are proposed with this concept that would create a visual obstruction.

Air Quality/Climate Change (Score: No Impact or Change)

Significant reductions in congestion and vehicular idling times and, thereby, changes to air quality and climate change, are not anticipated as a result of this extension.

Disturbed Land (Score: Minor Negative Effect)

A total of 12 acres of land would be disturbed either permanently or temporarily during construction as a result of this concept.

6.7.7 Community Consistency (Score: No Impact or Change)

The overall score of “no impact or change” for community consistency is a composite of the performance measures described below.

Neighborhood Preservation (Score: Negative Effect)

Residents surrounding Governor Miles Road have strongly opposed this extension and feel that their neighborhoods would be adversely affected by the additional traffic volume, which the model projects to be approximately 900 vehicles during an afternoon peak hour.

Residential and Business Relocations (Score: No Impact or Change)

This concept does not involve any residential or business relocations.

Economic Development (Score: No Impact or Change)

This concept would offer a second access point to the businesses located along Rodeo Park Drive, which could provide some benefit to the business park. However, several of the properties adjacent to Rodeo Park Drive have constructed a small portion of their parking lots within the public right-of-way and would lose those small areas with the widening of Rodeo Park Drive to current standards. While this should not adversely affect any of the businesses, it would be an inconvenience during construction, and could be perceived as a negative impact.

Land Use and Transportation Plan Consistency (Score: Positive Effect)

This concept was considered, in part, in support of “the prevalent sentiment against wide arterial streets and the desire to conserve the character of established neighborhoods” (*City of Santa Fe General Plan; City of Santa Fe, 1999*). By connecting a greater number of local two-lane roads, traffic would less likely be concentrated on a handful of wide arterials. This concept also promotes “a multimodal transportation system that encourages alternatives to automobile travel” ...and provides additional “pedestrian friendly” roads.

6.7.8 Financial Feasibility (Score: Minor Negative Effect)

The overall score of “minor negative effect” for financial feasibility is a composite of the performance measures described below. In this case, “minor negative effect” is better understood if described as financial feasibility on a scale of 1 to 5, with 5 equal to most financially feasible and 1 equal to least financially feasible. This concept would receive a score of 2 because of the moderately high cost and lack of available funding to implement it.

Project Cost (Score: No Impact or Change)

The estimated cost for this concept is \$16.2 million (using 2009 dollars, and based on a conceptual level layout).

Funding Availability (Score: Negative Effect)

No funding has been programmed for this concept.

6.8 Camino Carlos Rey Undercrossing

This concept proposes extending Camino Carlos Rey, from its terminus at Governor Miles Road, south under I-25 and Rabbit Road, and then east to the proposed Northeast Connector (see Figures 6-15 through 6-17). The Northeast Connector is identified in the 2005 MTP, south of I-25, between St. Francis Drive and Richards Avenue. Santa Fe County entered into a memorandum of understanding (MOU) with NMDOT on June 6, 2006, that obligates the Santa Fe County to design, construct, and maintain the Northeast Connector within 6 years to a minimum of frontage road standards as defined by AASHTO. According to the MOU, NMDOT will grant an easement to Santa Fe County for a portion of the Northeast Connector. Santa Fe County also entered into an MOU with Oshara Village, LLC (Oshara), on May 30, 2006, that obligated Oshara to assume the obligations of Santa Fe County to design and construct the Northeast Connector. Both of these MOUs are included in Appendix E.

An overpass over I-25 and connecting to Rabbit Road was also evaluated and determined to be fatally flawed for two primary reasons: it would have a grade of 9 percent, which is too severe for icy conditions, and would have a significant visual impact. Where applicable, both options – the overpass and undercrossing – are described in this section; however, the scores for each evaluation criteria and performance measure (also shown in Table 6-1) are only for the undercrossing option. This concept is one of three concepts referred to in this study as system connections because they provide additional connections to the regional transportation network.

6.8.1 Multi-modal Mobility (Score: Positive Effect)

The overall score of “positive effect” for multi-modal mobility is a composite of the performance measures described below.

Transit Reliability (Score: Minor Positive Effect)

An additional link in the transportation network provides another opportunity for new or improved transit routes, especially north and south across I-25.

Bicycle/Pedestrian Connectivity

Currently, the only north-south bicycle and pedestrian routes across I-25 are the four major arterials with interchanges, Richards Avenue, and the Rail Trail. The Rail Trail is the only crossing that is truly conducive to cyclists and pedestrians. This undercrossing would include bike lanes and sidewalks and provide a safe bicycle and pedestrian crossing of I-25 away from congested arterials and merging freeway traffic.

6.8.2 Vehicle Mobility (Score: No Impact or Change)

The overall score of “no impact or change” for vehicle mobility is a composite of the performance measures described below.

Vehicular Connectivity (Score: Minor Positive Effect)

System connectivity is one of the primary considerations benefits of this concept, which would provide an alternate north-south connection across I-25.

Access to I-25 (Score: No Impact or Change)

No additional access to I-25 is proposed with this option.

Volume/Capacity (Score: No Impact or Change)

This measure was considered jointly with all three system connections. An analysis of the V/C, as projected by the model, at key freeway, ramp, and arterial segments (see Table 4-2) suggested that the best overall improvement to congestion on the surrounding road network could be realized by constructing the system connections and the Richards Avenue interchange. The system connections, without an interchange at Richards Avenue, improved congestion at these key segments, but not as much as the interchange without the system connections. Therefore, the system connections are not projected to provide as much system-wide congestion relief as would a new interchange at Richards Avenue. The benefit

of adding the system connections together with the Richards Avenue interchange would not result in significant improvements over just adding the Richards Avenue interchange alone.

An analysis of the traffic volumes at same segments (see Table 4-2) showed that the system connections were not anticipated to displace enough traffic projected to use Richards Avenue to prevent Richards Avenue from needing to be widened in the future. A four-lane Richards Avenue is anticipated to accommodate the north-south traffic across I-25 between St. Francis Drive and Cerrillos Road.

System-wide Travel Time (Score: No Impact or Change)

This concept offers minimal improvements to system-wide travel time (see Table 4-3).

6.8.3 Vehicular Safety (Score: No Impact or Change)

Vehicular safety is not anticipated to change as a result of this concept.

6.8.4 Pedestrian/Bicycle Safety (Score: Positive Effect)

Currently, the only north-south bicycle and pedestrian routes across I-25 are the four major arterials with interchanges, Richards Avenue, and the Rail Trail. The Rail Trail is the only crossing that is truly conducive to cyclists and pedestrians. This undercrossing would include bike lanes and sidewalks and provide a safe bicycle and pedestrian crossing of I-25 away from congested arterials and merging freeway traffic.

6.8.5 Emergency Vehicle Response (Score: Minor Positive Effect)

The overall score of “minor positive effect” for emergency vehicle response is a composite of the performance measures described below.

Emergency Vehicle Response Time (Score: Minor Positive Effect)

Emergency vehicle response time is anticipated to improve slightly as a result of this additional system connection; however, it does not provide additional access to I-25 for emergency vehicles.

Redundancy (for Incident Management) (Score: Minor Positive Effect)

This extension provides a new connection across I-25 that could serve as a possible detour for incident management.

6.8.6 Environmental Preservation (Score: Minor Negative Effect)

The overall score of “no impact or change” for environmental preservation is a composite of the performance measures described below.

Noise Impacts (Score: Minor Negative Effect)

An undercrossing could possibly increase the noise level at sensitive receptor locations; however, speeds would be low and the extension would be below grade.

The overcrossing would have a greater noise impact, but is not reflected in the above score.

Visual Impacts (Score: No Impact or Change)

An undercrossing would not have any abovegrade structures that would create a visual obstruction.

An overcrossing would have a visual impact, but is not reflected in the above score. The complete analysis, visual representations, and technical report for the Camino Carlos Rey overcrossing can be found in Appendix D.

Air Quality/Climate Change (Score: No Impact or Change)

Significant reductions in congestion and vehicular idling times and, thereby, changes to air quality and climate change, are not anticipated as a result of this extension.

Disturbed Land (Score: Negative Effect)

A total of 13 acres of land would be disturbed either permanently or temporarily during construction as a result of this concept. While the total acreage is relatively low, the land that would be disturbed includes an arroyo between Governor Miles Road and I-25 that is potentially more environmentally sensitive.

6.8.7 Community Consistency (Score: No Impact or Change)

The overall score of “no impact or change” for community consistency is a composite of the performance measures described below.

Neighborhood Preservation (Score: Negative Effect)

Residents surrounding Camino Carlos Rey have strongly opposed this extension and feel that their neighborhoods would be adversely affected by the additional traffic volume, which the model projects to be approximately 2,000 vehicles during an afternoon peak hour.

Residential and Business Relocations (Score: No Impact or Change)

This concept does not involve any residential or business relocations.

Economic Development (Score: No Impact or Change)

This concept would offer additional access to the Santa Fe Community College District and the Oshara development, but it is unclear if this would result in a benefit to economic development.

Land Use and Transportation Plan Consistency (Score: Positive Effect)

This concept was considered, in part, in support of “the prevalent sentiment against wide arterial streets and the desire to conserve the character of established neighborhoods” (*City of Santa Fe General Plan; City of Santa Fe, 1999*). By connecting a greater number of local two-lane roads, traffic would less likely be concentrated on a handful of wide arterials. This concept also promotes “a multimodal transportation system that encourages alternatives to automobile travel” ...and provides additional “pedestrian friendly” roads.

6.8.8 Financial Feasibility (Score: Negative Effect)

The overall score of “negative effect” for financial feasibility is a composite of the performance measures described below. In this case, “negative effect” is better understood if described as financial feasibility on a scale of 1 to 5, with 5 equal to most financially feasible and 1 equal to least financially feasible. This concept would receive a score of 1 because of the high cost and lack of available funding to implement it.

Project Cost (Score: Negative Effect)

The estimated cost for this concept is \$30 million (using 2009 dollars, and based on a conceptual level layout).

Funding Availability (Score: Negative Effect)

No funding has been programmed for this concept.

6.9 Rail Runner Loop Overcrossing

This concept proposes an extension of the proposed Rail Runner Loop, south over I-25, connecting with an extension of the East Frontage Road (see Figure 6-18). This concept is one of three concepts referred to in this study as system connections because they provide additional connections to the regional transportation network.

6.9.1 Multi-modal Mobility (Score: Positive Effect)

The overall score of “positive effect” for multi-modal mobility is a composite of the performance measures described below.

Transit Reliability (Score: Minor Positive Effect)

An additional link in the transportation network provides another opportunity for new or improved transit routes, especially north and south across I-25.

Bicycle/Pedestrian Connectivity

Currently, the only north-south bicycle and pedestrian routes across I-25 are the four major arterials with interchanges, Richards Avenue, and the Rail Trail. The Rail Trail is the only crossing that is truly conducive to cyclists and pedestrians. This overcrossing would include bike lanes and sidewalks and provide a safe bicycle and pedestrian crossing of I-25 away from congested arterials and merging freeway traffic.

6.9.2 Vehicle Mobility (Score: No Impact or Change)

The overall score of “no impact or change” for vehicle mobility is a composite of the performance measures described below.

Vehicular Connectivity (Score: Minor Positive Effect)

System connectivity is one of the primary considerations benefits of this concept, which would provide an alternate north-south connection across I-25.

Access to I-25 (Score: No Impact or Change)

No additional access to I-25 is proposed with this option.

Volume/Capacity (Score: No Impact or Change)

This measure was considered jointly with all three system connections. An analysis of the V/C, as projected by the model, at key freeway, ramp, and arterial segments (see Table 4-2) suggested that the best overall improvement to congestion on the surrounding road network could be realized by constructing the system connections and Richards Avenue interchange. The system connections, without an interchange at Richards Avenue, improved congestion at these key segments, but not as much as the interchange without the system connections. Therefore, the system connections are not projected to provide as much system-wide congestion relief as would a new interchange at Richards Avenue. The benefit of adding the system connections together with the Richards Avenue interchange would not result in significant improvements over just adding the Richards Avenue interchange alone.

An analysis of the traffic volumes at same segments (see Table 4-2), showed that the system connections were not anticipated to displace enough traffic projected to use Richards Avenue to prevent Richards Avenue from needing to be widened in the future. A four-lane Richards Avenue is anticipated to accommodate the north-south traffic across I-25 between St. Francis Drive and Cerrillos Road.

System-wide Travel Time (Score: No Impact or Change)

This concept offers minimal improvements to system-wide travel time (see Table 4-3).

6.9.3 Vehicular Safety (Score: No Impact or Change)

Vehicular safety is not anticipated to change as a result of this concept.

6.9.4 Pedestrian/Bicycle Safety (Score: Positive Effect)

Currently, the only north-south bicycle and pedestrian routes across I-25 are the four major arterials with interchanges, Richards Avenue, and the Rail Trail. The Rail Trail is the only crossing that is truly conducive to cyclists and pedestrians. This overcrossing would include bike lanes and sidewalks and provide a safe bicycle and pedestrian crossing of I-25 away from congested arterials and merging freeway traffic.

6.9.5 Emergency Vehicle Response (Score: Minor Positive Effect)

The overall score of “minor positive effect” for emergency vehicle response is a composite of the performance measures described below.

Emergency Vehicle Response Time (Score: Minor Positive Effect)

Emergency vehicle response time is anticipated to improve slightly as a result of this additional system connection, which will also provide additional access to a proposed medical facility to be located in the Las Soleras development.

Redundancy (for Incident Management) (Score: Minor Positive Effect)

This extension provides a new connection across I-25 that could serve as a detour for incident management.

6.9.6 Environmental Preservation (Score: Minor Negative Effect)

The overall score of “no impact or change” for environmental preservation is a composite of the performance measures described below.

Noise Impacts (Score: Minor Negative Effect)

An overcrossing could possibly increase the noise level at sensitive receptor locations; however, speeds would be low.

Visual Impacts (Score: Minor Negative Effect)

An overcrossing would have a visual impact. The complete analysis, visual representations, and technical report can be found in Appendix D.

Air Quality/Climate Change (Score: No Impact or Change)

Significant reductions in congestion and vehicular idling times and, thereby, changes to air quality and climate change, are not anticipated as a result of this extension.

Disturbed Land (Score: Minor Negative Effect)

A total of 12 acres of land would be disturbed either permanently or temporarily during construction as a result of this concept.

6.9.7 Community Consistency (Score: No Impact or Change)

The overall score of “no impact or change” for community consistency is a composite of the performance measures described below.

Neighborhood Preservation (Score: Negative Effect)

Property owners between Dinosaur Trail and I-25 would experience additional traffic along the proposed overcrossing and Frontage Road extension. The model projects approximately 800 vehicles to use the crossing during an afternoon peak hour, which is about 500 more than is projected on Dinosaur Trail without the overcrossing.

Residential and Business Relocations (Score: No Impact or Change)

This concept does not involve any residential or business relocations.

Economic Development (Score: Minor Positive Effect)

This concept would provide a connection between the proposed Las Soleras development and the Santa Fe Community College District, and is assumed to result in a benefit to economic development.

Land Use and Transportation Plan Consistency (Score: Positive Effect)

This concept was considered, in part, in support of “the prevalent sentiment against wide arterial streets and the desire to conserve the character of established neighborhoods” (*City of Santa Fe General Plan; City of Santa Fe, 1999*). By connecting a greater number of local two-lane roads, traffic would less likely be concentrated on a handful of wide arterials. This concept also promotes “a multimodal transportation system that encourages alternatives to automobile travel” ...and provides additional “pedestrian friendly” roads.

6.9.8 Financial Feasibility (Score: Negative Effect)

The overall score of “minor negative effect” for financial feasibility is a composite of the performance measures described below. In this case, “minor negative effect” is better understood if described as financial feasibility on a scale of 1 to 5, with 5 equal to most financially feasible and 1 equal to least financially feasible. This concept would receive a score of 2 because of the high cost and lack of available funding to implement it.

Project Cost (Score: Negative Effect)

The estimated cost for this concept is \$24.8 million (using 2009 dollars, and based on a conceptual level layout).

Funding Availability (Score: Negative Effect)

No funding has been programmed for this concept.

6.10 No Build Alternative

The No Build Alternative assumes that the only improvements made within the I-25 corridor would be those already included in the 2005 MTP, with the exception of the Governor Miles Road extension.

6.10.1 Multi-modal Mobility (Score: Minor Negative Effect)

The overall score of “minor negative effect” for multi-modal mobility is a composite of the performance measures described below.

Transit Reliability (Score: Positive Effect)

Transit reliability would decrease with additional congestion on the unimproved road network.

Bicycle/Pedestrian Connectivity

Increased vehicle volumes on the road network, without bicycle or pedestrian improvements, will make it increasingly difficult for cyclists and pedestrians to travel.

6.10.2 Vehicle Mobility (Score: Minor Negative Effect)

The overall score of “minor negative effect” for vehicle mobility is a composite of the performance measures described below.

Vehicular Connectivity (Score: No Impact or Change)

No additional system connectivity is proposed with this option.

Access to I-25 (Score: No Impact or Change)

No additional access to I-25 is proposed with this option.

Volume/Capacity (Score: Negative Effect)

The V/C is projected by the model to worsen over time at key freeway, ramp, and arterial segments (see Table 4-2).

System-wide Travel Time (Score: Minor Negative Effect)

System-wide travel time is projected to worsen over time (see Table 4-3).

6.10.3 Vehicular Safety (Score: Negative Effect)

Vehicular safety would decline without any improvements.

6.10.4 Pedestrian/Bicycle Safety (Score: Negative Effect)

Pedestrian/bicycle safety would decline without any improvements.

6.10.5 Emergency Vehicle Response (Score: Minor Negative Effect)

The overall score of “minor negative effect” for emergency vehicle response is a composite of the performance measures described below.

Emergency Vehicle Response Time (Score: Negative Effect)

Emergency vehicle response time would decline without any improvements.

Redundancy (for incident management) (Score: No Impact or Change)

No redundant routes would be developed.

6.10.6 Environmental Preservation (Score: No Impact or Change)

The overall score of “no impact or change” for environmental preservation is a composite of the performance measures described below.

Noise Impacts (Score: No Impact or Change)

No changes to noise impacts are anticipated without improvements.

Visual Impacts (Score: No Impact or Change)

No new ramps or structures would be constructed that would create a visual obstruction.

Air Quality/Climate Change (Score: Negative Effect)

System-wide travel time is projected to worsen over time, which would result in increased congestion and vehicular idling times and, thereby, changes to air quality and climate change.

Disturbed Land (Score: No Impact or Change)

No land would be disturbed.

6.10.7 Community Consistency (Score: Minor Negative Effect)

The overall score of “minor negative effect” for community consistency is a composite of the performance measures described below.

Neighborhood Preservation (Score: No Impact or Change)

Without improvements, some residential neighborhoods would experience additional traffic volumes over time, but it is difficult to estimate or evaluate the effects.

Residential and Business Relocations (Score: No Impact or Change)

No residential or business relocations would take place.

Economic Development (Score: Minor Negative Effect)

Congestion will increase without improvements, affecting economic development.

Land Use and Transportation Plan Consistency (Score: Negative Effect)

The transportation network supports approved land use, and vice versa. Adopted land use and transportation plans accept the need for improvements to the transportation network to support planned growth.

6.10.8 Financial Feasibility (Score: Positive Effect)

The overall score of “positive effect” for financial feasibility is a composite of the performance measures described below. In this case, “positive effect” is better understood if described as financial feasibility on a scale of 1 to 5, with 5 equal to most financially feasible and 1 equal to least financially feasible. This concept would receive a score of 5 because there are neither project costs nor funding involved to implement it.

Project Cost (Score: Positive Effect)

There would be no project costs.

Funding Availability (Score: Positive Effect)

No funding would need to be programmed.



LEGEND

— CUT	— CURB
— FILL	— SIDEWALK
— RIGHT-OF-WAY	— EDGE OF ASPHALT
— BRIDGE	— RETAINING WALL

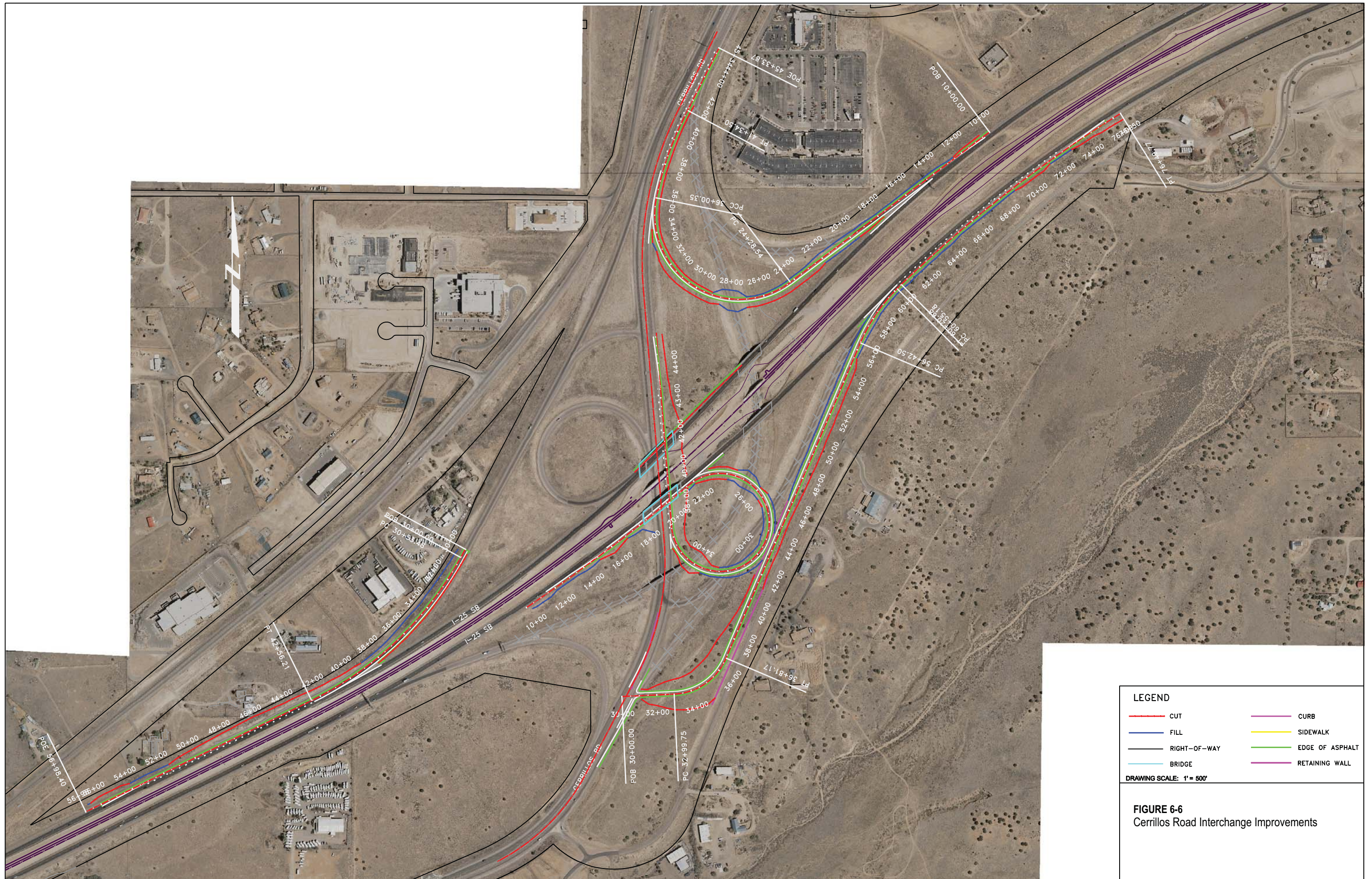
DRAWING SCALE: 1" = 500'

FIGURE 6-1
 St. Francis Drive Interchange Improvements,
 Option A: Signalized Ramp Terminal at
 Northbound I-25 to Northbound St. Francis Drive

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LEGEND

	CUT		CURB
	FILL		SIDEWALK
	RIGHT-OF-WAY		EDGE OF ASPHALT
	BRIDGE		RETAINING WALL

DRAWING SCALE: 1" = 500'

FIGURE 6-6
Cerrillos Road Interchange Improvements

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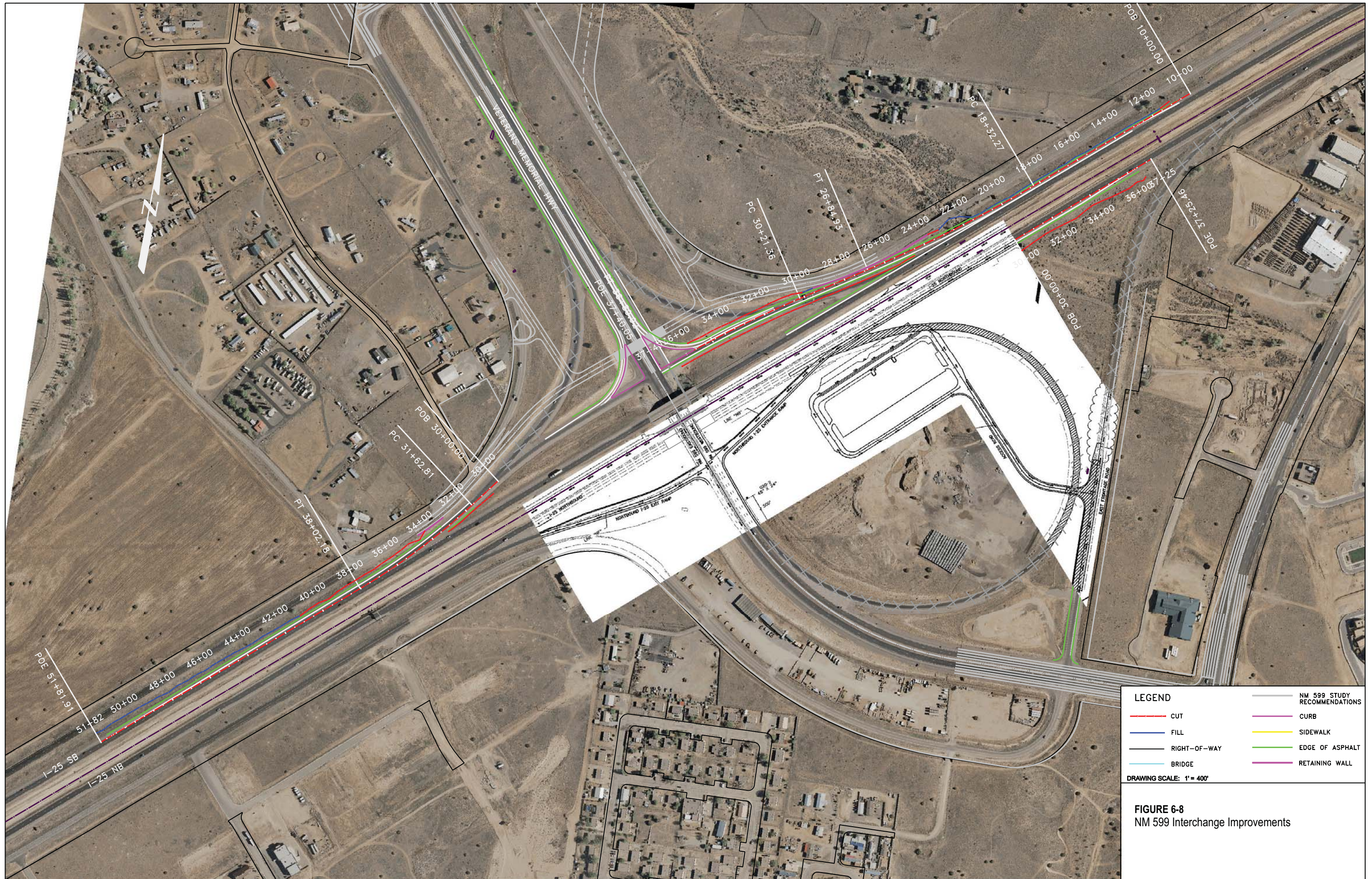
LEGEND

	CUT		CURB
	FILL		SIDEWALK
	RIGHT-OF-WAY		EDGE OF ASPHALT
	BRIDGE		RETAINING WALL

DRAWING SCALE: 1" = 400'

FIGURE 6-7
 NM 466 (Old Pecos Trail) Interchange
 Improvements

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LEGEND

	CUT		NM 599 STUDY RECOMMENDATIONS
	FILL		CURB
	RIGHT-OF-WAY		SIDEWALK
	BRIDGE		EDGE OF ASPHALT
	RETAINING WALL		

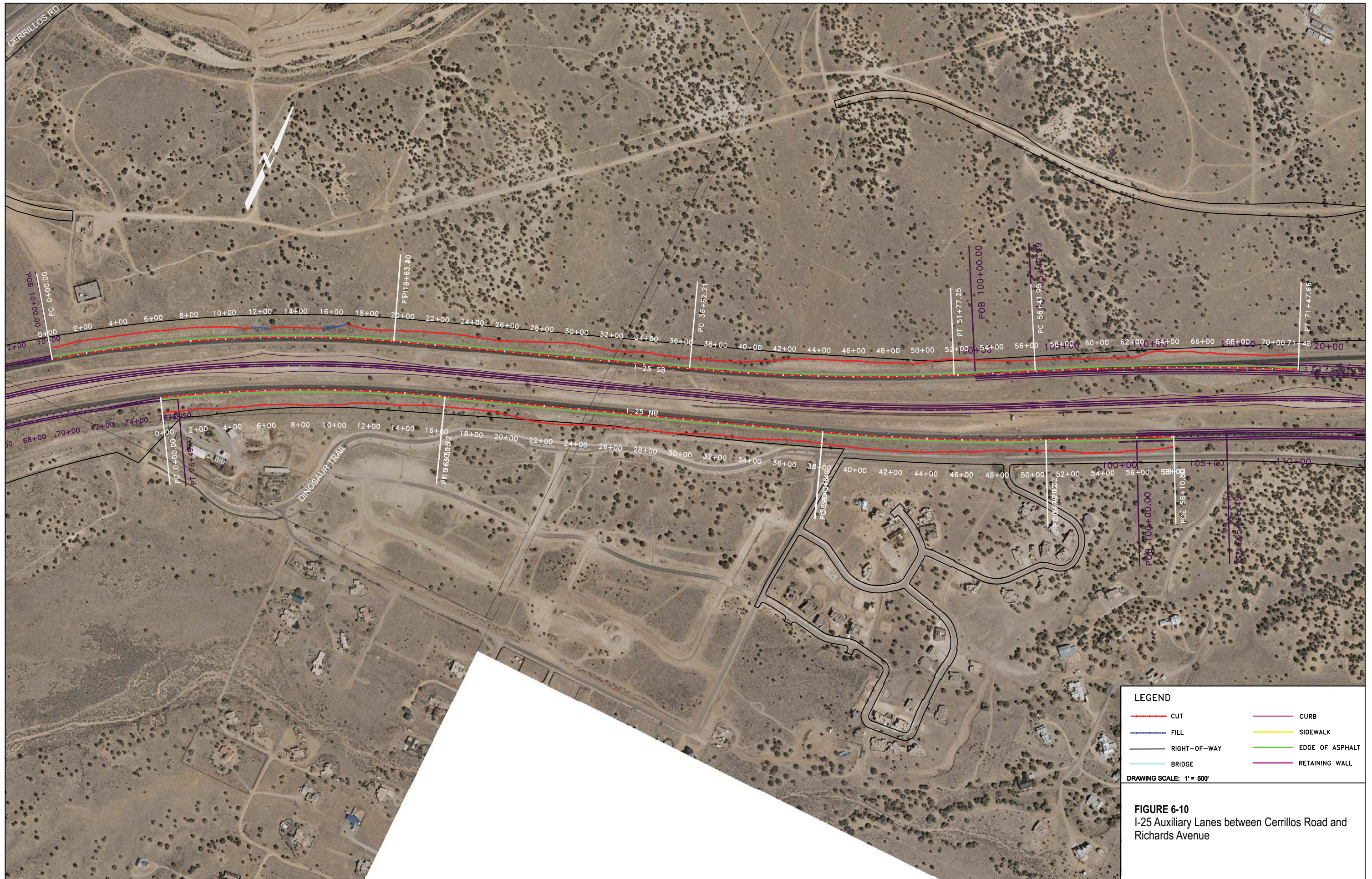
DRAWING SCALE: 1" = 400'

FIGURE 6-8
NM 599 Interchange Improvements

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LEGEND

	CUT		CURB
	FILL		SIDEWALK
	RIGHT-OF-WAY		EDGE OF ASPHALT
	BRIDGE		RETAINING WALL

DRAWING SCALE: 1" = 800'

FIGURE 6-11
I-25 Auxiliary Lanes between Richards Avenue and St. Francis Drive

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LEGEND

— CUT	— CURB
— FILL	— SIDEWALK
— RIGHT-OF-WAY	— EDGE OF ASPHALT
— BRIDGE	— RETAINING WALL

DRAWING SCALE: 1" = 500'

FIGURE 6-13
Richards Avenue Interchange

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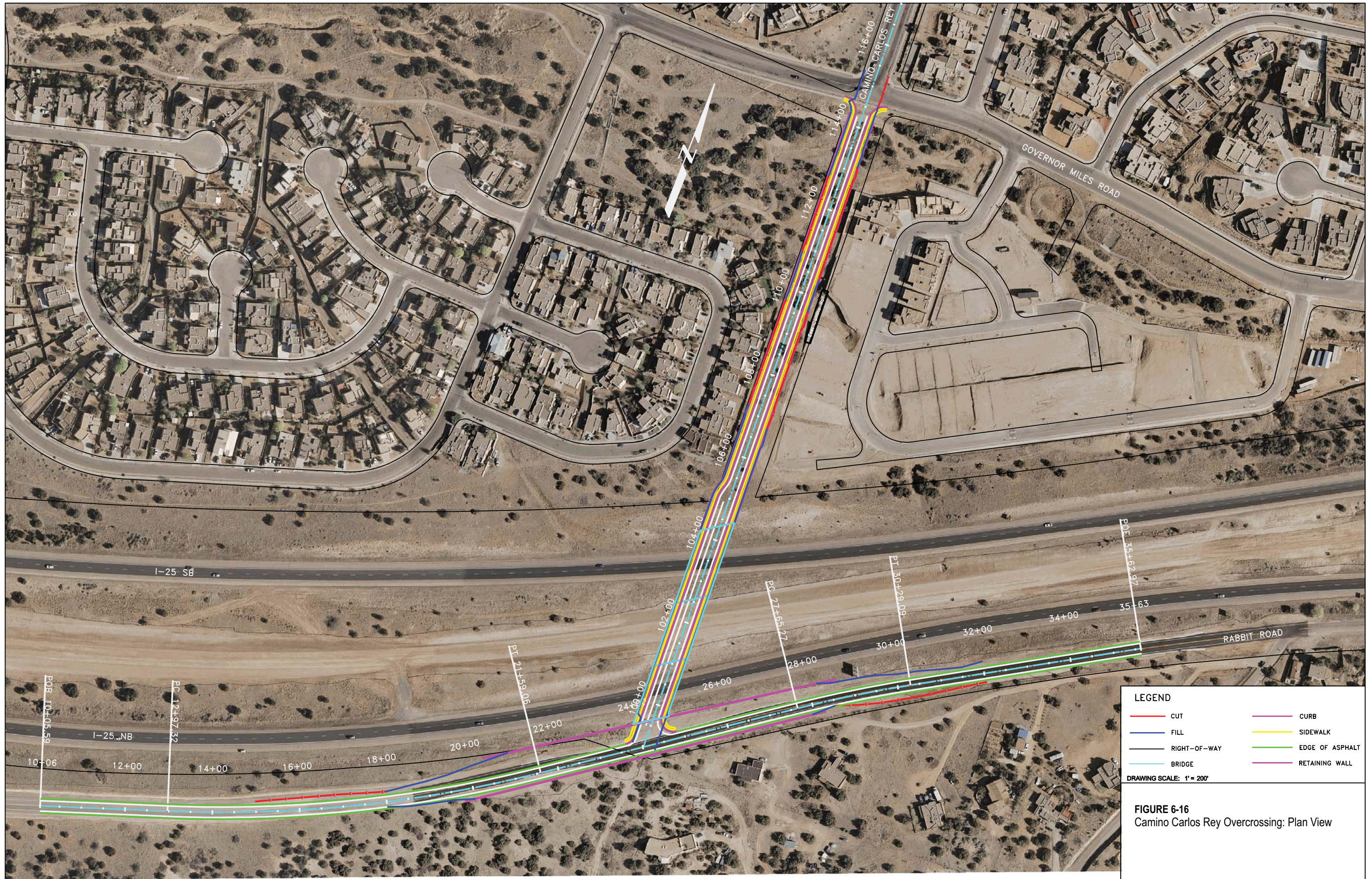


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FIGURE 6-15
Camino Carlos Rey Undercrossing: Plan View

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LEGEND

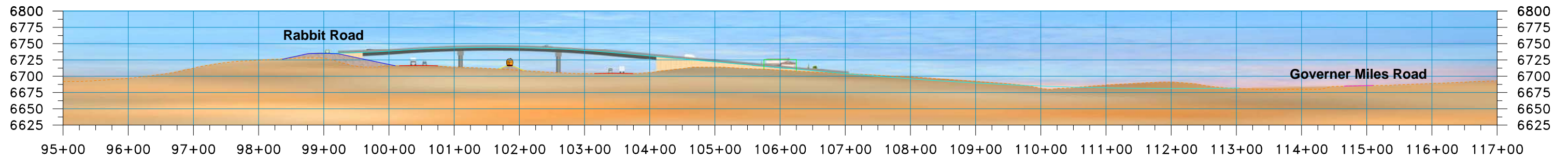
	CUT		CURB
	FILL		SIDEWALK
	RIGHT-OF-WAY		EDGE OF ASPHALT
	BRIDGE		RETAINING WALL

DRAWING SCALE: 1" = 200'

FIGURE 6-16
Camino Carlos Rey Overcrossing: Plan View

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Overcrossing



Undercrossing

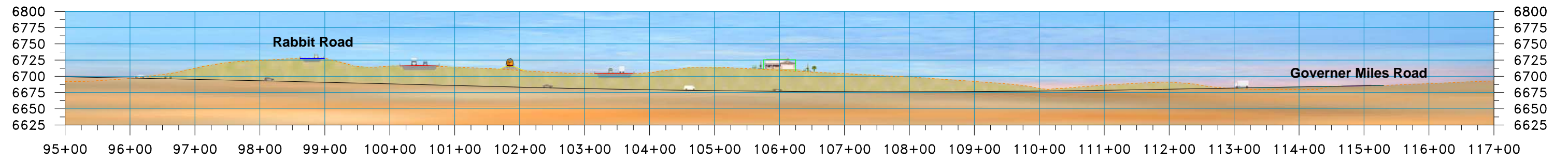
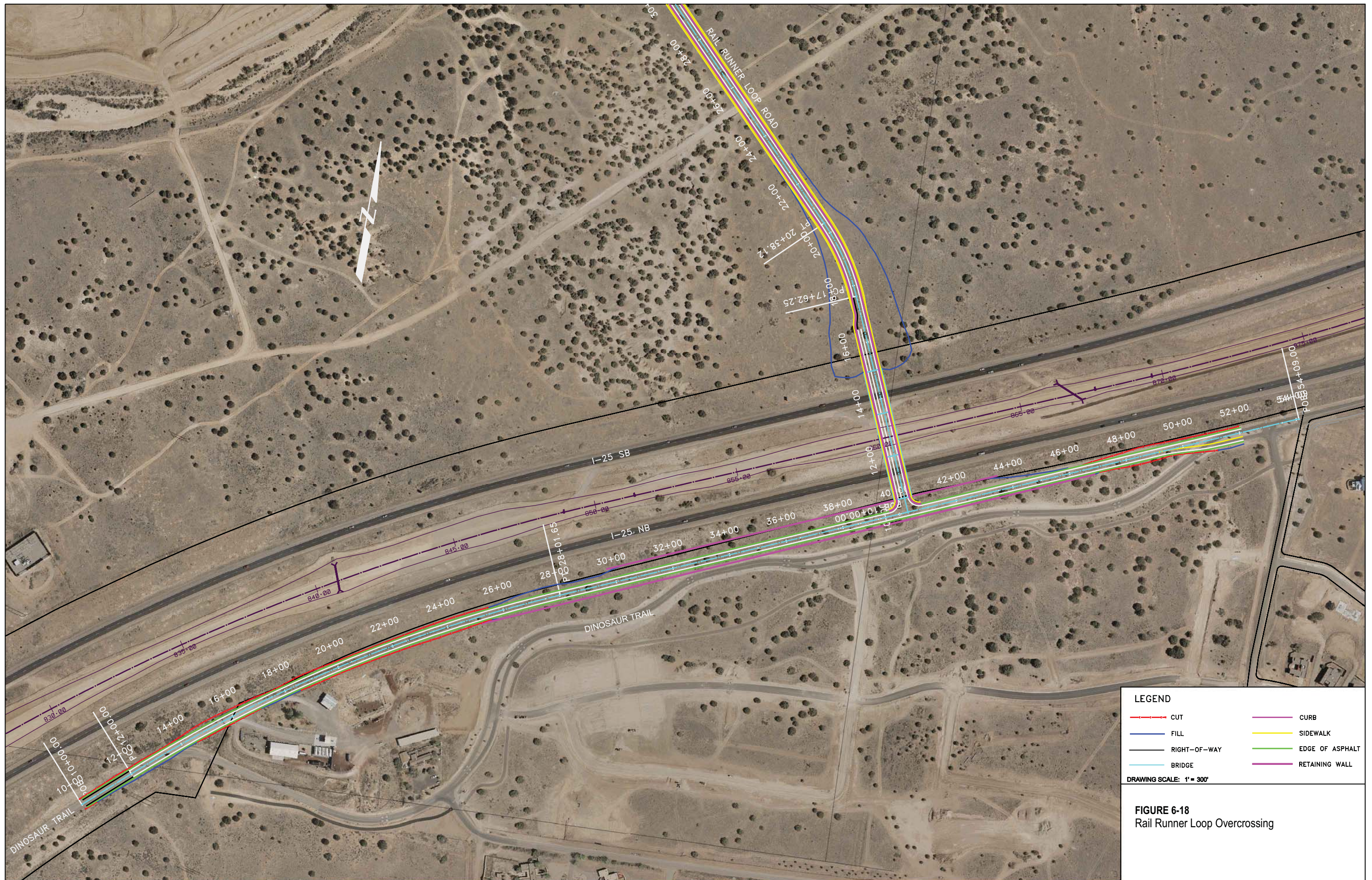




FIGURE 6-17
Camino Carlos Rey Profile Views

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LEGEND

 CUT	 CURB
 FILL	 SIDEWALK
 RIGHT-OF-WAY	 EDGE OF ASPHALT
 BRIDGE	 RETAINING WALL

DRAWING SCALE: 1" = 300'

FIGURE 6-18
 Rail Runner Loop Overcrossing

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7.1 Improvement Concepts Recommended for Inclusion in the Metropolitan Transportation Plan

The improvement concepts that provide the greatest benefit at the least cost are listed in Table 7-1 in order of priority, and recommended for inclusion in the MTP. The improvement concepts for additional system connectivity (Governor Miles Extension, Camino Carlos Rey Undercrossing, and Rail Runner Loop Overcrossing) are not believed to provide sufficient benefit for the costs that would be incurred and are, therefore, not recommended for inclusion in the MTP. The benefits are considered in terms of how well the concept contributes to the following evaluation criteria: multi-modal mobility, vehicle mobility, vehicular safety, bicycle/pedestrian safety, and emergency vehicle response. The costs are considered in terms of the community and environmental impacts, and the financial costs of developing the concept. The benefits and costs are not weighted equally, but are based on the best judgment of the project management team for the I-25 Corridor Study, with guidance from the analysis described in Section 6 of this report.

TABLE 7-1
Concepts Recommended for Inclusion in the MTP

Priority	Improvement Concept
1	St. Francis Drive Interchange Improvements
2	Cerrillos Road Interchange Improvements
3	NM 466 (Old Pecos Trail) Interchange Improvements
4	NM 599 (Veterans Memorial Highway) Interchange Improvements
5	Auxiliary lanes on I-25: between Cerrillos Road and St. Francis Drive
6	New Richards Avenue Interchange
7	Auxiliary lanes on I-25: between St. Francis Drive and NM 466 (Old Pecos Trail) ^a
9	Auxiliary lanes on I-25: between NM 599 (Veterans Memorial Highway) and Cerrillos Road

Note:

^aBecause of the grade northbound, consideration should be given to extend the auxiliary lane north through the interchange at NM 466 (Old Pecos Trail) for slow moving vehicles.

7.2 Project Recommendations

The improvement concepts recommended Section 7.1 can be broken into smaller, individual projects that can be advanced as funding becomes available. Table 7-2 groups these projects by short-, medium-, and long-term priorities.

The short-term projects are recommended to address deficiencies in bridges at the St. Francis Drive and Cerrillos Road interchanges, as noted in the I-25 Corridor Study Existing Conditions Report. The medium-term projects are primarily safety enhancements that include extending all of the I-25 on-ramps to allow greater distance to accelerate and safely merge onto I-25, and shift each of the southbound off-ramps farther south of the adjacent signalized intersections to allow greater distance for vehicles turning left to safely traverse through traffic lanes. The long-term projects address capacity and access, and correct other geometric deficiencies.

TABLE 7-2
Project Recommendations

Short-term Improvement Projects	Planning Level Cost Estimate
St. Francis: NB I-25 off-ramp (includes remove and back-fill both I-25 bridges over existing ramp)	\$ 1,500,000
St. Francis: Reconstruction of Both I-25 Bridges Over Saint Francis (includes improvements to St. Francis)	\$ 7,000,000
Cerrillos: NB I-25 off-ramp. Includes:	\$ 15,000,000
<ul style="list-style-type: none"> • Remove and back-fill both I-25 bridges over existing ramp • Reconstruct NB on-ramp • Lengthen I-25 bridges to accommodate merge lane • Improvements to Cerrillos 	
Medium-Term Improvement Projects	Planning Level Cost Estimate
NM 599: NB I-25 on-ramp	\$ 200,000
Cerrillos: SB I-25 off-ramp to North Cerrillos	\$ 1,200,000
Cerrillos: SB I-25 on-ramp	\$ 900,000
St. Francis: NB I-25 on-ramp (from NB St. Francis)	\$ 700,000
St. Francis: NB I-25 on-ramp loop (from SB St. Francis)	\$ 900,000
St. Francis: SB I-25 off-ramp	\$ 1,200,000
St. Francis: SB I-25 on-ramp	\$ 5,000,000
NM 466: NB I-25 on-ramp (from NB Old Pecos Trail)	\$ 1,300,000
NM 466: NB I-25 on-ramp loop (from SB Old Pecos Trail)	\$ 1,000,000
NM 466: SB I-25 off-ramp and SB I-25 On Ramp	\$ 4,200,000

TABLE 7-2
Project Recommendations

Long-term Improvement Projects	Planning Level Cost Estimate
Cerrillos: SB I-25 off-ramp to South Cerrillos	\$ 400,000
NM 466: NB I-25 off-ramp	\$ 700,000
NM 599: SB I-25 off-ramp	\$ 1,400,000
NM 599: SB I-25 on-ramp	\$ 1,100,000
Auxiliary lanes on I-25: Cerrillos – St. Francis	\$ 17,000,000
Auxiliary lanes on I-25: St. Francis Dr – NM 466	\$ 2,000,000
Auxiliary lanes on I-25: NM 599 – Cerrillos	\$ 4,000,000
Richards Avenue Interchange	\$15M - \$35M

7.3 Interim Safety Improvements

There are several low-cost, interim safety improvement projects that could be considered should funding be delayed for the ultimate improvements recommended above. These interim projects are listed in Table 7-3, and described below.

TABLE 7-3
Interim Safety Improvement Projects

Interim Safety Improvement Projects	Planning Level Cost Estimate
Electronic Emergency Vehicle Access Gate(s)	\$ 100,000
Partial Interchange Lighting at all four interchanges	\$ 400,000
Prohibit left-turns onto Beckner from SB I-25 off-ramp to NB Cerrillos. Create U-turn pocket north of Beckner.	\$ 300,000
NM 466: SB I-25 off-ramp (temporary extension)	\$ 200,000
Cerrillos: NB I-25 on-ramp (temporary extension)	\$ 200,000
Cerrillos: SB I-25 on-ramp (temporary extension)	\$ 200,000
NM 466: NB I-25 on-ramp (from NB Old Pecos Trail--temporary extension)	\$ 200,000
NM 466: NB I-25 on-ramp loop (from SB Old Pecos Trail--temporary extension)	\$ 200,000
NM 466: SB I-25 on-ramp (temporary extension)	\$ 200,000
NM 599: SB I-25 on-ramp (temporary extension)	\$ 200,000

7.3.1 Electronic Emergency Vehicle Access Gates

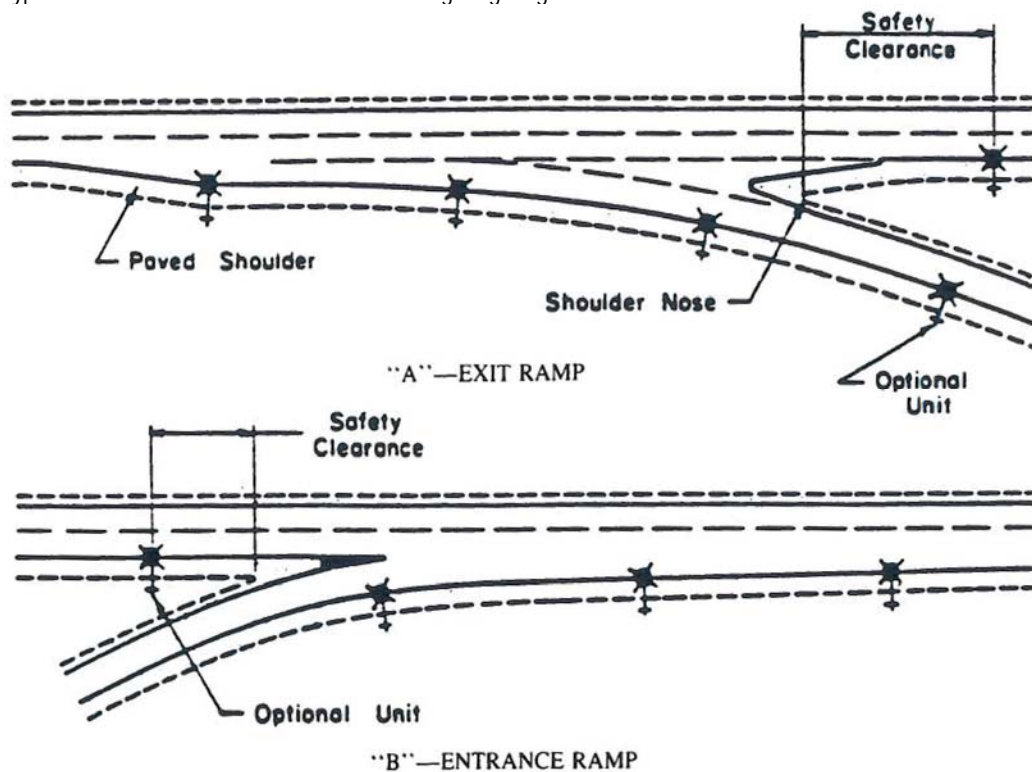
Emergency access to I-25, and crossings of I-25, are very limited. Crossing I-25 between the Cerrillos Road interchange and the St. Francis Drive interchange – a distance of 5 miles – requires unlocking gates between these interchanges, crossing the Rail Runner track, and re-locking the gates. At this time, there is only one such gate in the entire corridor at MP 279.5. Consideration should be given to converting this gate to an electronic gate with a

secure remote control device for emergency responders. Additional crossing locations with electronic gates should be investigated and evaluated.

7.3.2 Partial Interchange Lighting

Complete interchange lighting, per AASHTO standards (AASHTO, 1984), is recommended for the ultimate improvements. As a temporary safety enhancement, partial interchange lighting could be added to each interchange with luminaires “located to best light the through lanes and speed change lanes at diverging and merging locations” (AASHTO, 1984) as well as key bicycle/pedestrian conflict points, as illustrated in Figure 7-1. The City of Santa Fe should also consider illuminating Cerrillos Road, from Beckner Road, south through the I-25 interchange.

FIGURE 7-1
Typical Luminaire Locations: Partial Interchange Lighting



Source: AASHTO, 1984

7.3.3 Intersection at Cerrillos and Beckner Roads

Prohibiting traffic exiting I-25 onto northbound Cerrillos Road from turning left onto the Frontage Road (at the Beckner Road signal) would provide a short-term solution to the operational and safety problems in this area until the interchange could be reconfigured. This could be accomplished by extending the left-turn bay for Frontage Road farther south toward the I-25 entrance ramp gore, or extending the ramp gore farther north. A raised median could separate the left-turn bay from the through lanes as a physical barrier. Those

vehicles desiring to turn left could gain access to Frontage Road by making a U-turn at a specified location north of the signal.

7.3.4 NM 466/Old Pecos Trail Southbound Interchange

During the morning commute, traffic sometimes backs up onto the mainline at the southbound I-25 off-ramp at Old Pecos Trail. Ultimately the cause of the backup will need to be addressed by implementing the changes recommended in this study; however, in the interim, simply extending the southbound exit ramp farther north will provide additional needed storage.

7.3.5 Lengthen I-25 Entrance Ramps

Several of the I-25 entrance ramps, listed in Table 7-3, could be extended at minimal cost, but could require using the existing shoulder and some additional widening. The disadvantages of this approach include expending resources for alignments and geometry that will vary somewhat from the ultimate configuration, and the temporary loss of shoulders, which are needed for recovery. However, the safety benefits of extending the ramps outweigh the cost of implementing these interim improvements, or doing nothing.



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